Century Systems Thermal Printer

Century Eagle 4

Owner's Manual

Document No. **CSE1-33034**

Original **Aug., 2003**

Century Systems, Inc.

CE Compliance (for EU only)

This product complies with the requirements of EMC and Low Voltage Directives including their amendments.

VORSICHT:

- *Schallemission: unter 70dB (A) nach DIN 45635 (oder ISO 7779)*
- *Die für das Gerät Vorgesehene Steckdose muß in der Nähe des Gerätes und leicht zugänglich sein.*

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Microsoft® is a registered trademark of Microsoft Corporation.
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Century Systems has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

-- Outline of the International ENERGY STAR® Office Equipment Program --

The International ENERGY STAR® Office Equipment Program is an international program that promotes energy saving through the penetration of energy efficient computers and other office equipment. The program backs the development and dissemination of products with functions that effectively reduce energy consumption. It is an open system in which business proprietors can participate voluntarily. The targeted products are office equipment such as computers, monitors, printers, facsimiles, copiers, scanners, and multifunction devices. Their standards and logos are uniform among participating nations.

ENERGY STAR® is a trademark fo The Environmental Protection agency

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

(for USA only)

Changes or modifications not expressly approved by manufacturer for compliance could void the user's authority to operate the equipment.

"This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations."
"Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada."

(for CANADA only)

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Safety Summary

Personal safety in handling or maintaining the equipment is extremely important. Warnings and Cautions necessary for safe handling are included in this manual. All warnings and cautions contained in this manual should be read and understood before handling or maintaining the equipment.
Do not attempt to effect repairs or modifications to this equipment. If a fault occurs that cannot be rectified using the procedures described in this manual, turn off the power, unplug the machine, then contact your authorized Century Systems representative for assistance.

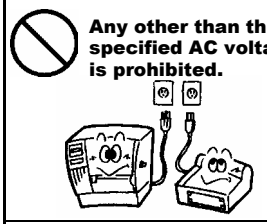
Meaning of Each Symbol

This symbol indicates warning items (including cautions).
Specific warning contents are drawn inside the △ symbol.
(The symbol on the left indicates a general caution.)

This symbol indicates prohibited actions (prohibited items).
Specific prohibited contents are drawn inside or near the ⃠ symbol.
(The symbol on the left indicates "no disassembling".)

This symbol indicates actions which must be performed.
Specific instructions are drawn inside or near the ● symbol.
(The symbol on the left indicates "disconnect the power cord plug from the outlet".)

WARNING This indicates that there is the risk of **death** or **serious injury** if the machines are improperly handled contrary to this indication.

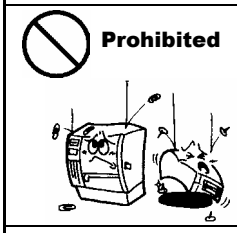


Do not use voltages other than the voltage (AC) specified on the rating plate, as this may cause **fire** or **electric shock**.

Do not plug in or unplug the power cord plug with wet hands as this may cause **electric shock**.

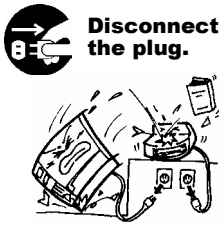
If the machines share the same outlet with any other electrical appliances that consume large amounts of power, the voltage will fluctuate widely each time these appliances op000000erate. Be sure to provide an exclusive outlet for the machine as this may cause **fire** or **electric shock**.

Do not place metal objects or water-filled containers such as flower vases, flower pots or mugs, etc. on top of the machines. If metal objects or spilled liquid enter the machines, this may cause **fire** or **electric shock**.

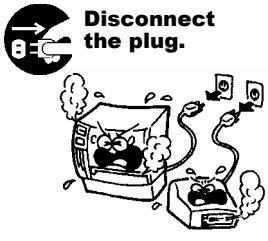


Do not insert or drop metal, flammable or other foreign objects into the machines through the ventilation slits, as this may cause **fire** or **electric shock**.

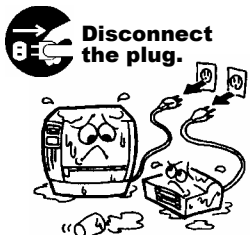
Do not scratch, damage or modify the power cords. Also, do not place heavy objects on, pull on, or excessively bend the cords, as this may cause **fire** or **electrical shock**.



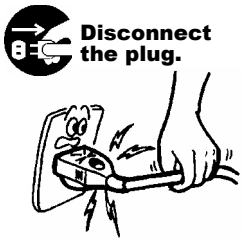
If the machines are dropped or their cabinets damaged, first turn off the power switches and disconnect the power cord plugs from the outlet, and then contact your authorized Century Systems representative for assistance. Continued use of the machine in that condition may cause **fire** or **electric shock**.



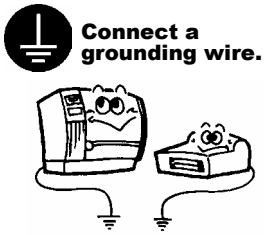
Continued use of the machines in an abnormal condition such as when the machines are producing smoke or strange smells may cause **fire** or **electric shock**. In these cases, immediately turn off the power switches and disconnect the power cord plugs from the outlet. Then, contact your authorized Century Systems representative for assistance.



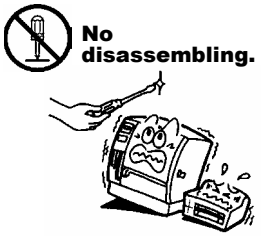
If foreign objects (metal fragments, water, liquids) enter the machines, first turn off the power switches and disconnect the power cord plugs from the outlet, and then contact your authorized Century Systems representative for assistance. Continued use of the machine in that condition may cause **fire** or **electric shock**.



When unplugging the power cords, be sure to hold and pull on the plug portion. Pulling on the cord portion may cut or expose the internal wires and cause **fire** or **electric shock**.



Ensure that the equipment is properly grounded. Extension cables should also be grounded. **Fire** or **electric shock** could occur on improperly grounded equipment.



Do not remove covers, repair or modify the machine by yourself. You may be **injured** by high voltage, very hot parts or sharp edges inside the machine.

CAUTION This indicates that there is the risk of personal **Injury** or **damage** to objects if the machines are improperly handled contrary to this indication.

Precautions

The following precautions will help to ensure that this machine will continue to function correctly.

- Try to avoid locations that have the following adverse conditions:
  - * Temperatures out of the specification
  - * Direct sunlight
  - * High humidity
  - * Shared power source
  - * Excessive vibration
  - * Dust/Gas
- The cover should be cleaned by wiping with a dry cloth or a cloth slightly dampened with a mild detergent solution. NEVER USE THINNER OR ANY OTHER VOLATILE SOLVENT on the plastic covers.
- USE ONLY Century Systems SPECIFIED paper and ribbons.
- DO NOT STORE the paper or ribbons where they might be exposed to direct sunlight, high temperatures, high humidity, dust, or gas.
- Ensure the printer is operated on a level surface.
- Any data stored in the memory of the printer could be lost during a printer fault.
- Try to avoid using this equipment on the same power supply as high voltage equipment or equipment likely to cause mains interference.
- Unplug the machine whenever you are working inside it or cleaning it.
- Keep your work environment static free.
- Do not place heavy objects on top of the machines, as these items may become unbalanced and fall, causing **injury**.
- Do not block the ventilation slits of the machines, as this will cause heat to build up inside the machines and may cause **fire**.
- Do not lean against the machine. It may fall on you and could cause **injury**.
- Care must be taken not to injure yourself with the printer paper cutter.
- Unplug the machine when it is not used for a long period of time.
- Place the machine on a stable and level surface.

Request Regarding Maintenance

- Utilize our maintenance services.
- After purchasing the machine, contact your authorized Century Systems representative for assistance once a year to have the inside of the machine cleaned. Otherwise, dust will build up inside the machines and may cause a **fire** or a **malfunction**. Cleaning is particularly effective before humid rainy seasons.
- Our preventive maintenance service performs the periodic checks and other work required to maintain the quality and performance of the machines, preventing accidents beforehand.
  For details, please consult your authorized Century Systems representative for assistance.
- Using insecticides and other chemicals:
  Do not expose the machines to insecticides or other volatile solvents. This will cause the cabinet or other parts to deteriorate or cause the paint to peel.

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GLOSSARIES

WARNING!

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

CAUTION!

1. **This manual may not be copied in whole or in part without prior written permission of Century Systems.**
2. **The contents of this manual may be changed without notification.**
3. **Please refer to your local Authorized Service representative with regard to any queries you may have in this manual.**

1. PRODUCT OVERVIEW

1.1 Introduction

Thank you for choosing the Century Eagle 4 series thermal printer. This Owner's Manual covers operation of the printer from general set-up through how to confirm the printer operation using a test print, and should be read carefully to help gain maximum performance and life from your printer. For most queries please refer to this manual and keep it safe for future reference. Please contact your Century Systems representative for further information concerning this manual.

1.2 Features

This printer has the following features:

- The print head block can be opened providing smooth loading of media and ribbon.
- Various kinds of media can be used, as the media sensors can be moved from the centre to the left edge of the media.
- When the optional interface board is installed, Web functions such as remote maintenance and other advanced network features are available.
- Superior hardware, including the specially developed 8 dots/mm (203 dots/inch) thermal print head which will allow very clear print at a printing speed of 76.2 mm/sec. (3 inches/sec.), 152.4 mm/sec. (6 inches/sec.), or 254.0 mm/sec. (10 inches/sec.).
- Besides the optional Cutter Module, there is also an optional Strip Module, Ribbon Saving Module, PCMCIA Interface Board, Expansion I/O Interface Board, LAN Interface Board, and the USB Interface Board.

1.3 Unpacking

Unpack the printer as per the Unpacking Instructions supplied with the printer.

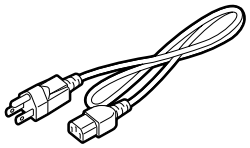
NOTES:

1. *Check for damage or scratches on the printer. However, please note that Century Systems shall have no liability for any damage of any kind sustained during transportation of the product.*
2. *Keep the cartons and pads for future transportation of the printer.*

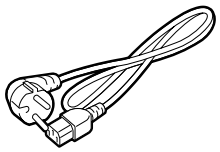
1.4 Accessories

When unpacking the printer, please make sure all the following accessories are supplied with the printer.

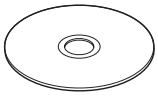
☐ US Power Cord (1 pc.)
(P/No. CEP00024)
QQ model only



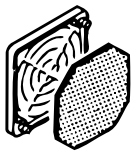
☐ EU Power Cord (1 pc.)
(P/No. CEP00025)
QP model only



☐ CD-ROM (1 pc.)
QQ (P/No. CEP00022)
QP (P/No. CEP00023)



☐ Fan Filter (1 pc.)
(P/No. CEP00019)

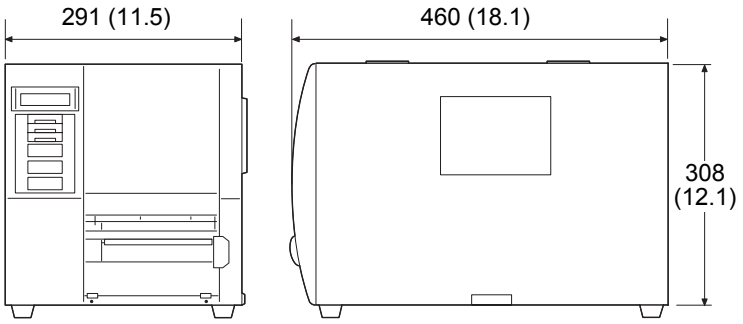


Note: In the event that there is no CD included, current drivers and demo software can be found online in the download section at www.centurysystems.biz

1.5 Appearance

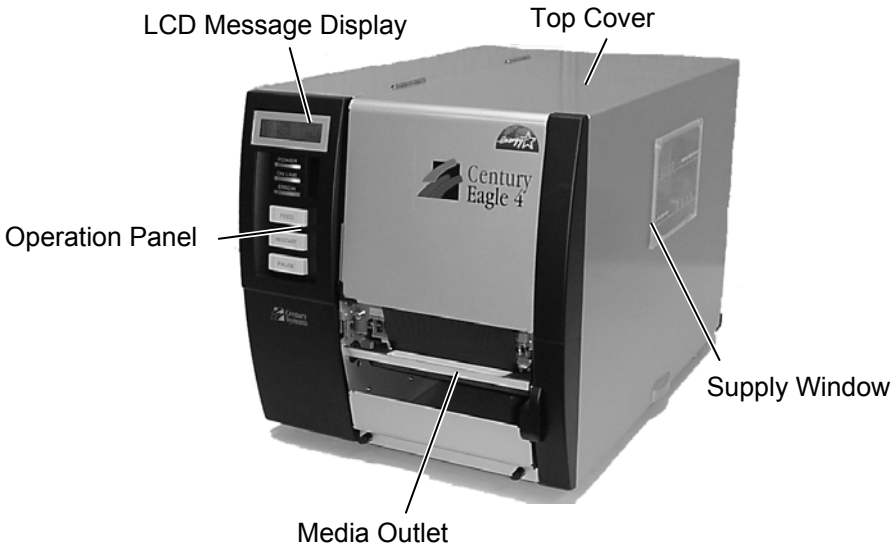
The names of the parts or units introduced in this section are used in the following chapters.

1.5.1 Dimensions

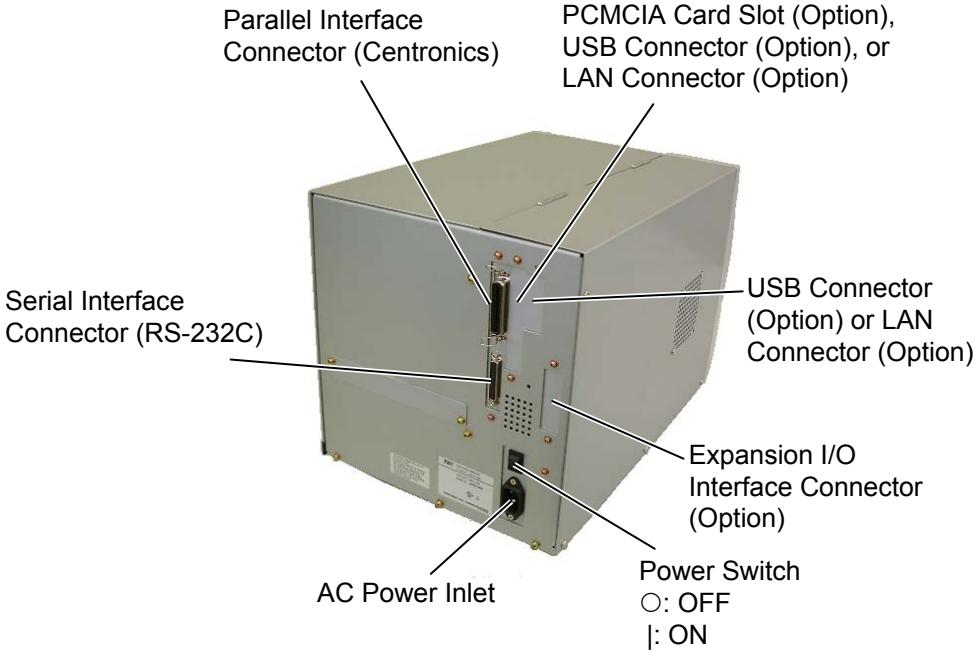


Dimensions in mm (inches)

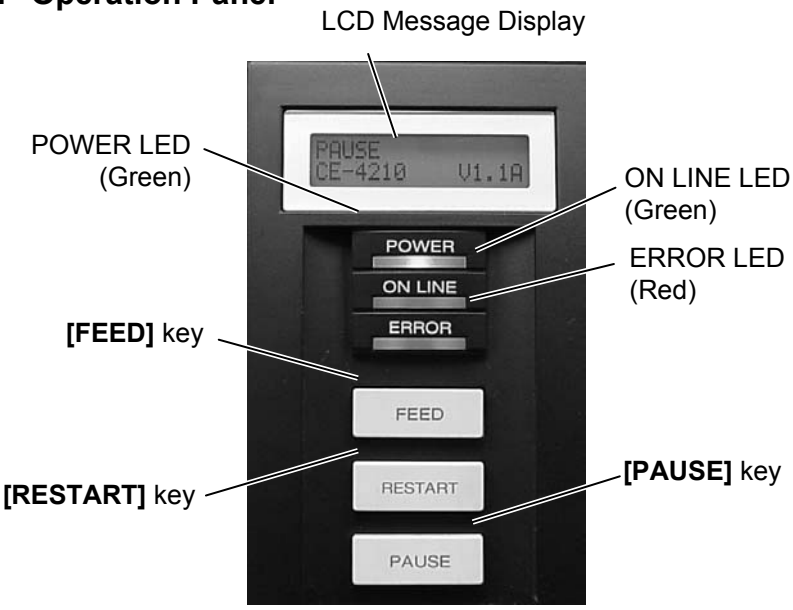
1.5.2 Front View



1.5.3 Rear View

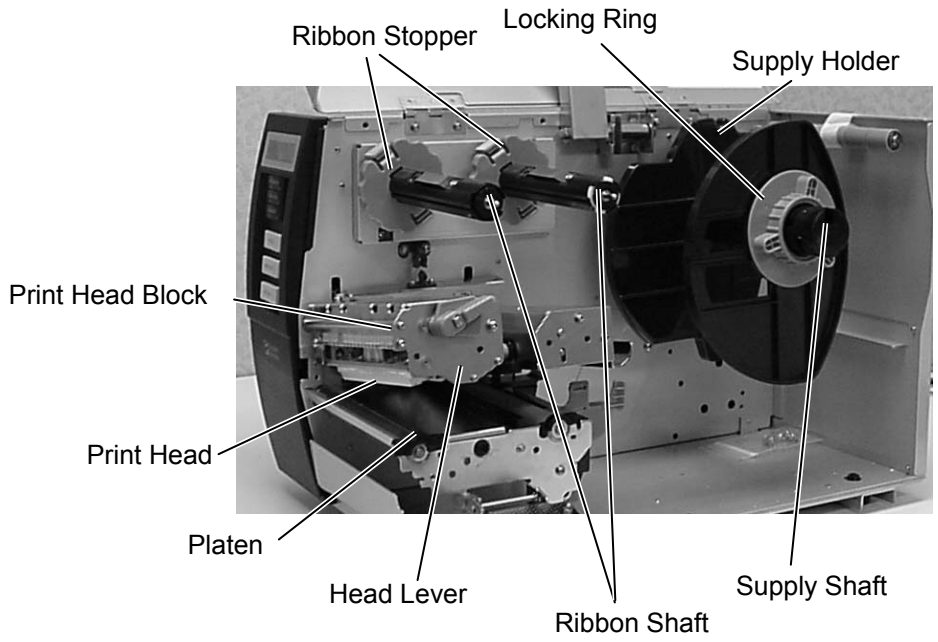


1.5.4 Operation Panel



Please see Section 3.1 for further information about the Operation Panel.

1.5.5 Interior



2. PRINTER SETUP

This section outlines the procedures to set up your printer prior to its operation. The section includes precautions, connecting cables, assembling accessories, loading media and ribbon, inserting the optional memory card, and performing a test print.

2.1 Precautions

To insure the best operating environment, and to assure the safety of the operator and the equipment, please observe the following precautions:

- Operate the printer on a stable, level, operating surface in a location free from excessive humidity, high temperature, dust, vibration or direct sunlight.
- Keep your work environment static free. Static discharge can cause damage to delicate internal components.
- Make sure that the printer is connected to a clean source of AC Power and that no other high voltage devices that may cause line noise interference are connected to the same mains.
- Assure that the printer is connected to the AC mains with a three-prong power cable that has the proper ground (earth) connection.
- Do not operate the printer with the cover open. Be careful not to allow fingers or articles of clothing to get caught into any of the moving parts of the printer, especially the optional cutter mechanism.
- Make sure to turn off the printer power and to remove the power cord from the printer whenever working on the inside of the printer, such as when changing the ribbon or loading the media, or when cleaning the printer.
- For best results, and longer printer life, use only Century Systems recommended media and ribbons.
- Store the media and ribbons in accordance with their specifications.
- This printer mechanism contains high voltage components; therefore, you should never remove any of the covers of the machine, as you may receive an electrical shock. Additionally, the printer contains many delicate components that may be damaged if accessed by unauthorized personnel.
- Clean the outside of the printer with a clean dry cloth or a clean cloth slightly dampened with a mild detergent solution.
- Use caution when cleaning the thermal print head as it may become very hot while printing. Wait until it has had time to cool before cleaning. Use only the Century Systems recommended print head cleaner to clean the print head.
- Do not turn off the printer power or remove the power plug while the printer is printing or while the ON LINE lamp is blinking.

2.2 Procedure before Operation

This section describes the outline of the printer setup.

1. Unpack the accessories and printer from the box.

2. Refer to Safety Precautions in this manual and set up the printer at a proper location.

3. Fit the Fan Filter to the printer. (Refer to Section 2.3.)

4. The host computer must have a serial, Centronics parallel, USB or LAN port. (Refer to Section 2.4.)

5. Be sure to insert the power cord plug into an AC outlet. (Refer to Section 2.5.)

6. Load the media. (Refer to Section 2.7.)

7. Adjust the position of the Feed Gap Sensor or Black Mark Sensor depending on the media being used. (Refer to Section 2.7.)

8. Load the ribbon. (Refer to Section 2.8.)

9. Turn the power ON. (Refer to Section 2.6.)

10. Perform a test print. (Refer to Section 2.10.)

11. Install the Printer Drivers. (Refer to the Printer Driver Manual.)

NOTE:

To communicate with the host computer, one of the following cables is required.

(1) RS-232C cable: 25 pins
(2) Centronics cable: 36 pins
(3) USB: B plug (Option)
(4) LAN: 10 Base-T or 100 Base-TX (Option)

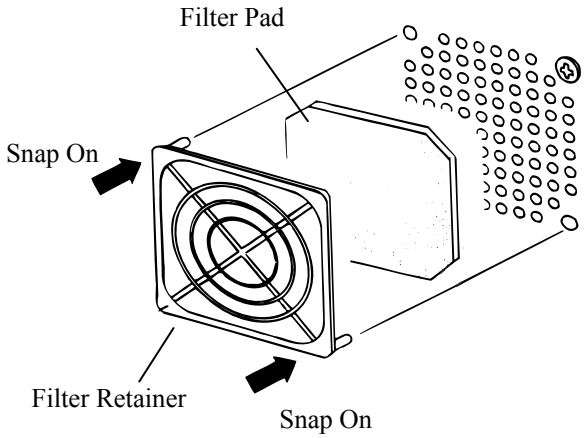
2.3 Fitting the Fan Filter

When installing the printer, it is important to ensure that the Fan Filter is attached before using the printer.

The Fan Filter consists of 2 parts:

(1) Filter Pad
(2) Filter Retainer

To fit the Fan Filter, put the Filter Pad inside the Filter Retainer and simply press into place as shown in the diagram below, ensuring connecting pins are aligned with the connecting holes.



2.4 Connecting the Cables to Your Printer

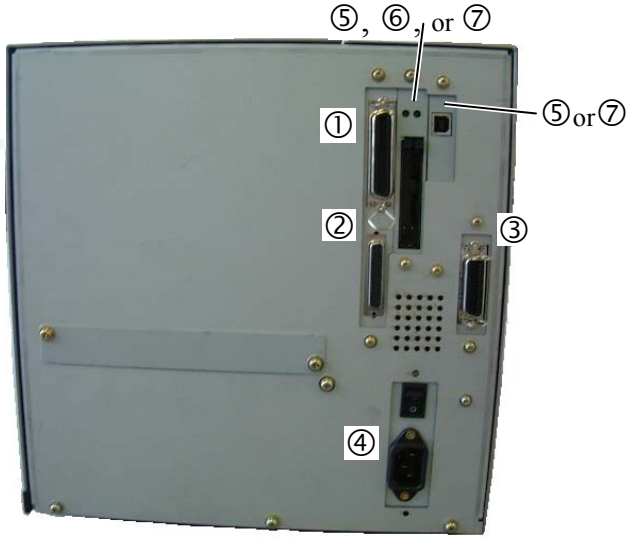
The following paragraphs outline how to connect the cables from the printer to your host computer, and will also show how to make cable connections to other devices. Depending on the application software you use to print labels, there are four possibilities for connecting the printer to your host computer. These are:

- A serial cable connection between the printer's RS-232 serial connector and one of your host computer's COM ports. (Refer to APPENDIX 3.)
- A parallel cable connection between the printer's standard parallel connector and your host computer's parallel port (LPT).
- An Ethernet connection using the optional LAN board.
- A USB cable connection between the printer's optional USB connector and your host computer's USB port. (Conforming to USB 1.1)

The diagram below shows all the possible cable connections to the current version of the printer.

NOTES:

1. *The picture on the right shows the layout of the interface connectors when the options are fully installed. It may be different depending on your system configuration.*
2. *The USB interface and LAN interface cannot be used at the same time.*



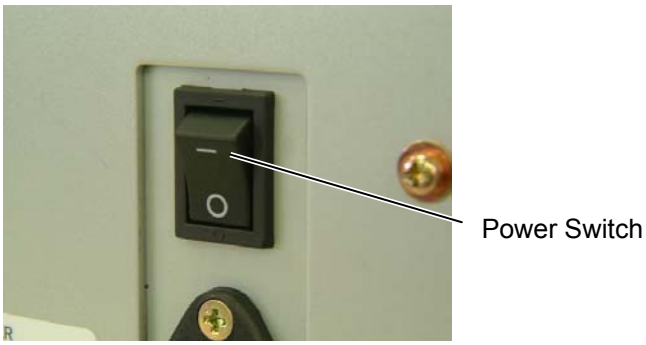
① Parallel Interface Connector (Centronics)
② Serial Interface Connector (RS-232C)
③ Expansion I/O Interface Connector (Option)
④ Power Inlet
⑤ USB Interface Connector (Option)
⑥ PCMCIA Card Slot (Option)
⑦ LAN Interface Connector (Option)

2.5 Connecting the Power Cord

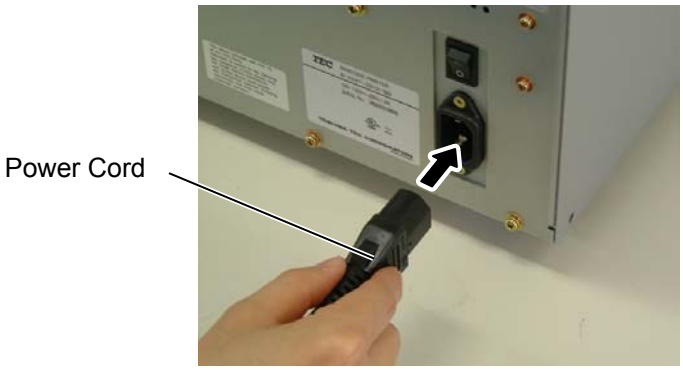
CAUTION!

1. *Make sure that the printer Power Switch is turned to the OFF position (○) before connecting the Power Cord to prevent possible electric shock or damage to the printer.*
2. *Use only the Power Cord supplied with the printer. Use of any other cord may cause electric shock or fire.*
3. *Connect the Power Cord to a supply outlet with a properly grounded (earthed) connection.*

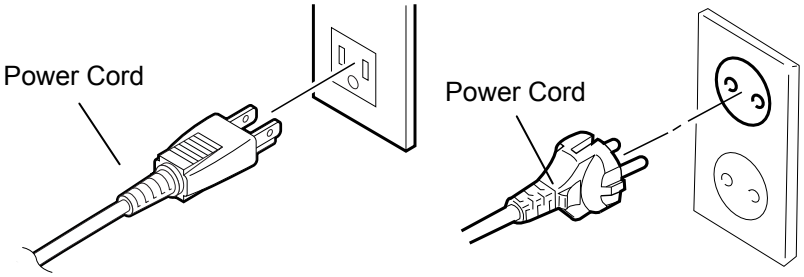
1. Make sure that the printer Power Switch is in the OFF (○) position.



2. Connect the Power Cord to the printer as shown in the figure below.



3. Plug the other end of the Power Cord into a grounded outlet as shown in the figure below.



[QQ Type] **[QP Type]**

2.6 Turning the Printer ON/OFF

When the printer is connected to your host computer it is good practice to turn the printer ON before turning on your host computer and turn OFF your host computer before turning off the printer.

2.6.1 Turning ON the Printer

CAUTION!

Use the power switch to turn the printer On/Off. Plugging or unplugging the Power Cord to turn the printer On/Off may cause fire, an electric shock, or damage to the printer.

NOTE:

If a message other than ON LINE appears on the display or the ERROR LED lamp is illuminated, go to Section 5.1, Error Messages.

1. To turn ON the printer power, press the Power Switch as shown in the diagram below. Note that (**|**) is the power ON side of the switch.

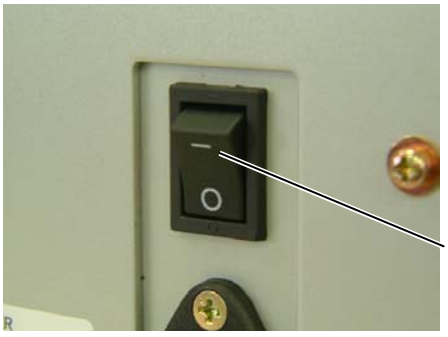
2. Check that the ON LINE message appears in the LCD Message Display and that the ON LINE and POWER LED lights are illuminated.

2.6.2 Turning OFF the Printer

CAUTION!

1. *Do not turn off the printer power while the media is being printed as this may cause a paper jam or damage to the printer.*
2. *Do not turn off the printer power while the ON LINE lamp is blinking as this may cause damage to your computer.*

1. Before turning off the printer Power Switch verify that the ON LINE message appears in the LCD Message Display and that the ON LINE LED light is on and is not flashing.
2. To turn OFF the printer power press the Power Switch as shown in the diagram below. Note that (O) is the power OFF side of the switch.



2.7 Loading the Media

WARNING!

1. *Do not touch any moving parts. To reduce the risk of fingers, jewelery, clothing, etc., being drawn into the moving parts, be sure to load the media once the printer has stopped moving completely.*
2. *The Print Head becomes hot immediately after printing. Allow it to cool before loading the media.*
3. *To avoid injury, be careful not to trap your fingers while opening or closing the cover.*

CAUTION!

Be careful not to touch the Print Head Element when raising the Print Head Block. Failure to do this may cause missing dots by static electricity or other print quality problems.

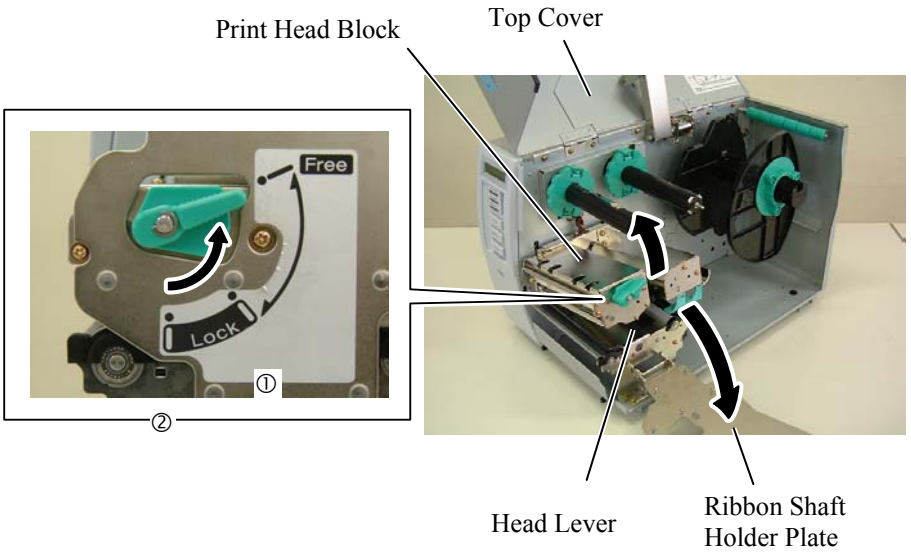
NOTES:

1. *When the Head Lever is turned to **Free** position, the Print Head is raised.*
2. *To allow printing the Head Lever must be set to **Lock** position. (This ensures that the Print Head is closed.) There are two head pressure levels in the **Lock** position. Set the Head Lever depending on the media type:*
   Position ①: Labels
   Position ②: Tags
   However, proper position may differ depending on media. For details, refer to Century Systems authorised service representative.
3. *Do not turn the Locking Ring counter-clockwise too far or it may come off the Supply Holder.*

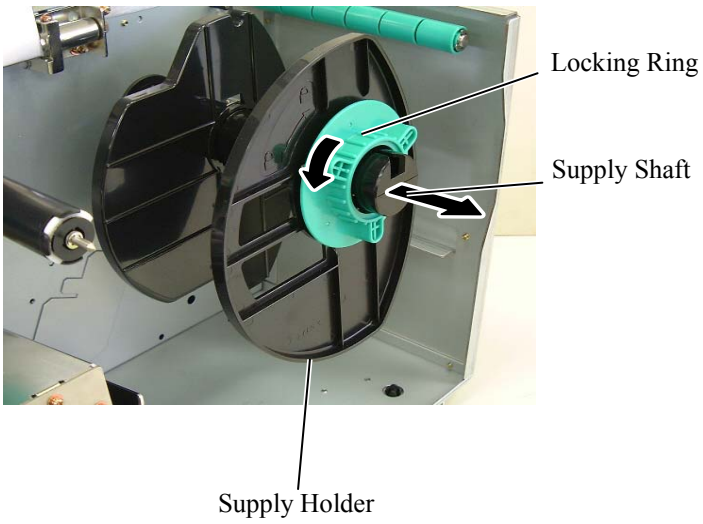
The following procedure shows the steps to properly load the media into the printer so that it feeds straight and true through the printer.

The printer prints both labels and tags.

1. Turn off the power and open the Top Cover.
2. Turn the Head Lever to **Free** position, then release the Ribbon Shaft Holder Plate.
3. Open the Print Head Block.



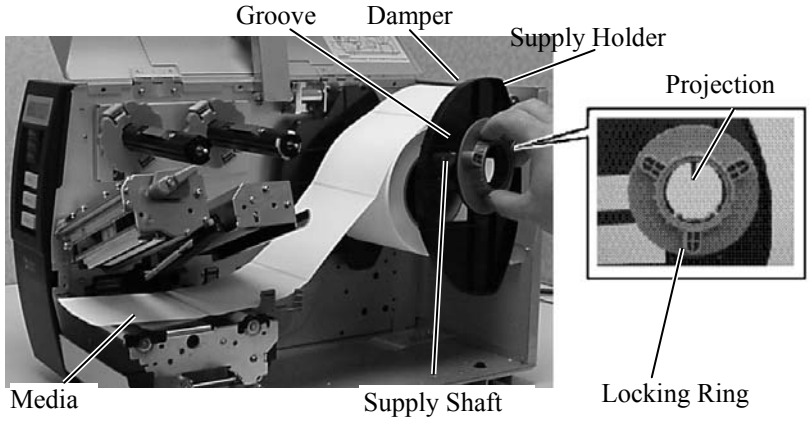
4. Turn the Locking Ring counterclockwise and remove the Supply Holder from the Supply Shaft.



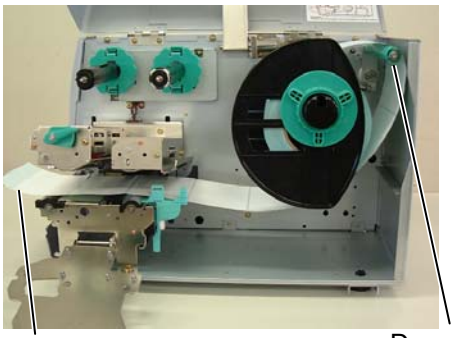
2.7 Loading the Media (Cont.)

> ***NOTE:***
> *Do not over-tighten the Locking Ring of the Supply Holder.*

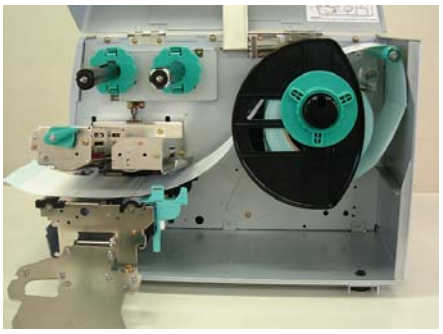
5. Put the media on the Supply Shaft.
6. Pass the media around the Damper, then pull the media towards the front of the printer.
7. Align the projection of the Supply Holder with the groove of the Supply Shaft, and push the Supply Holder against the media until the media is held firmly in place. This will centre the media automatically.
   Then turn the Locking Ring clockwise to secure the Supply Holder.



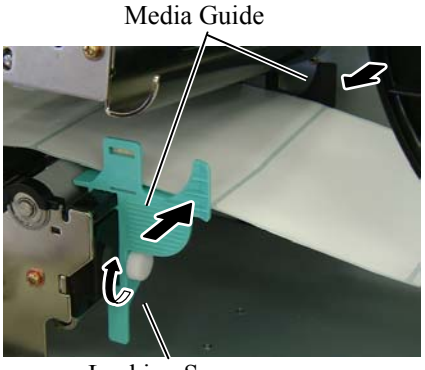
In case of a label rolled with the print side facing inside.

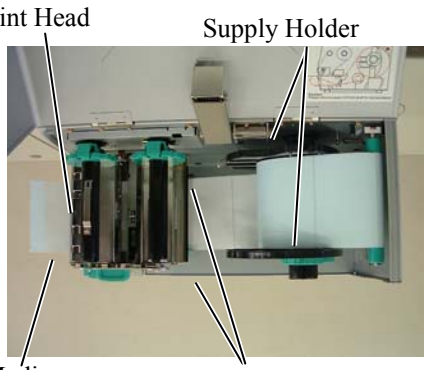


In case of a label rolled with the print side facing outside.



8. Place the media between the Media Guides, adjust the Media Guides to the media width, and tighten the Locking Screw.
9. Check that the media path through the printer is straight. The media should be centered under the Print Head.





2.7 Loading the Media (Cont.)

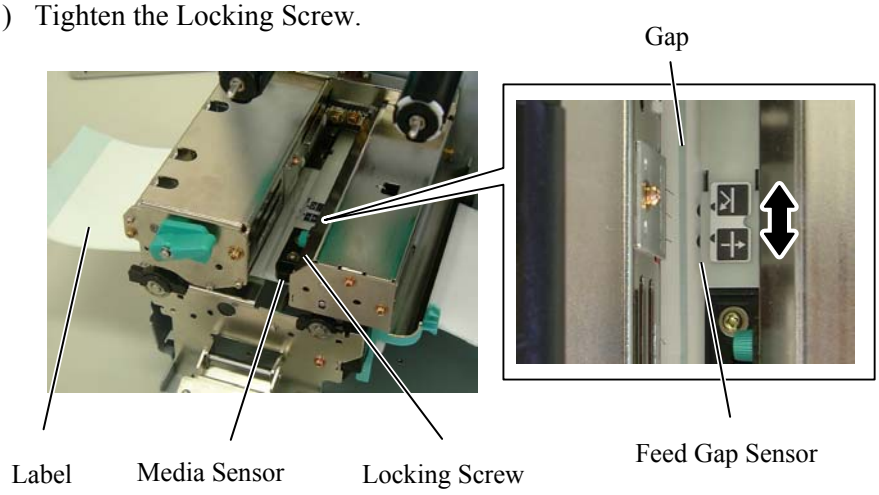
10. Lower the Print Head Block until it stops.

11. After loading the media, it may be necessary to set the Media Sensors used to detect the print start position for label or tag printing.

> ***NOTE:***
> *Be sure to set the black mark sensor to detect the centre of the black mark, otherwise a paper jam or no paper error may occur.*

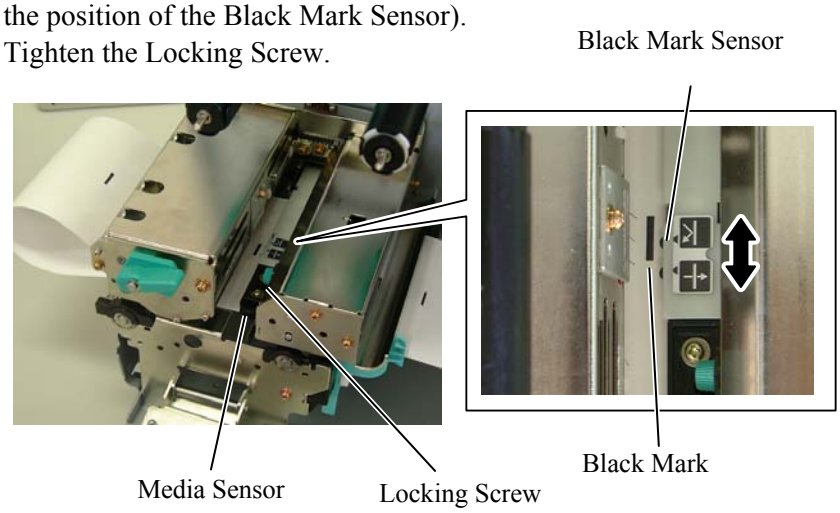
Setting the Feed Gap Sensor position

(1) Remove the Locking Screw that secures the Media Sensor.
(2) Manually move the Media Sensor so that the Feed Gap Sensor is positioned at the centre of the labels. (┼→ indicates the position of the Feed Gap Sensor).
(3) Tighten the Locking Screw.



Setting the Black Mark Sensor position

(1) Remove the Locking Screw that secures the Media Sensor.
(2) Pull about 500 mm of media out of the front of the printer, turn the media back on itself and feed it under the Print Head past the sensor so that the black mark can be seen from above.
(3) Manually move the Media Sensor so that the Black Mark Sensor is in line with the centre of the black mark on the media. (↙| indicates the position of the Black Mark Sensor).
(4) Tighten the Locking Screw.

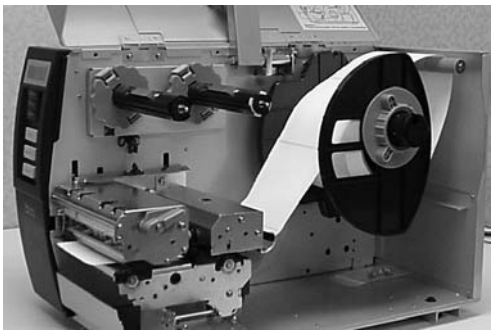


2.7 Loading the Media (Cont.)

12. There are four issue modes available on this printer. How to set the media for each mode is provided below.

Batch mode

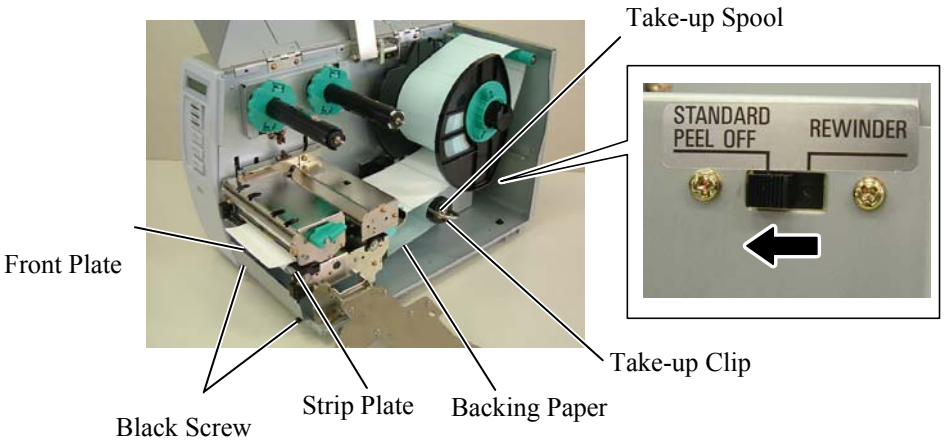
In the batch mode, the media is continuously printed and fed until the number of labels/tags specified in the issue command have been printed.



Strip mode

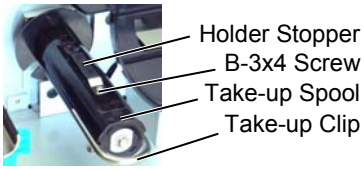
When the optional Strip Module is fitted, the backing paper is automatically removed from the label at the Strip Plate as each label is printed.

(1) Remove enough labels from the leading edge of the media to leave 500mm of backing paper free.
(2) Insert the backing paper under the Strip Plate.
(3) Wind the backing paper onto the Take-up Spool and fix it in position with the Take-up Clip. (Wind the paper counterclockwise around the spool as this is the direction it rotates.)
(4) Rotate the Take-up Spool counterclockwise a few times to remove any slack in the backing paper.
(5) Set the Selection Switch mounted on the Rewinder Assembly to **STANDARD/PEEL OFF** position.



NOTES:

1. *Be sure to set the Selection Switch to **STANDARD/ PEEL OFF** position.*
2. *The backing paper is easier to feed back to the Take-Up Spool if the Front Plate is removed.*
3. *Fit the Take-Up Clip so that the longer side of the clip is fitted into the shallow groove in the Take-Up Spool.*
4. *The backing paper can be wound directly onto the Take-up Spool or a paper core. When using the Take-up Spool, detach the Holder Stopper by removing the B-3x4 screw. Otherwise, it may be difficult to pull out the wound backing paper roll.*



When using a paper core, put the core on the Take-up Spool with the Holder Stopper on it, and attach the top edge of the backing paper to the core with adhesive tape. The Take-up Clip is not necessary.
This winding method is applicable to the Built-in Rewinder mode.

2.7 Loading the Media (Cont.)

NOTE:

Be sure to set the Selection Switch to REWINDER position.

ADJUSTMENT:

If the media skews when using the Built-in Rewinder, turn the Adjustment Knob of the Rewinder Guide Plate to correct the media feed. Clockwise turn moves the Rewinder Guide Plate forward and counter-clockwise moves it backward.

When the media skews to the right:
Loosen the SM-4x8 screw, turn the Adjustment Knob clockwise, and then tighten the SM-4x8 screw when the Rewinder Guide Plate is positioned correctly.

When the media skews to the left:
Loosen the SM-4x8 screw, turn the Adjustment Knob counter-clockwise, and tighten the SM-4x8 screw when the Rewinder Guide Plate is positioned correctly.

WARNING!

The cutter is sharp, so care must be taken not to injure yourself when handling the cutter.

CAUTION!

1. *Be sure to cut the backing paper of the label. Cutting labels will cause the glue to stick to the cutter which may affect the cutter quality and shorten the cutter life.*
2. *Use of tag paper when the thickness exceeds the specified value may affect the cutter life.*

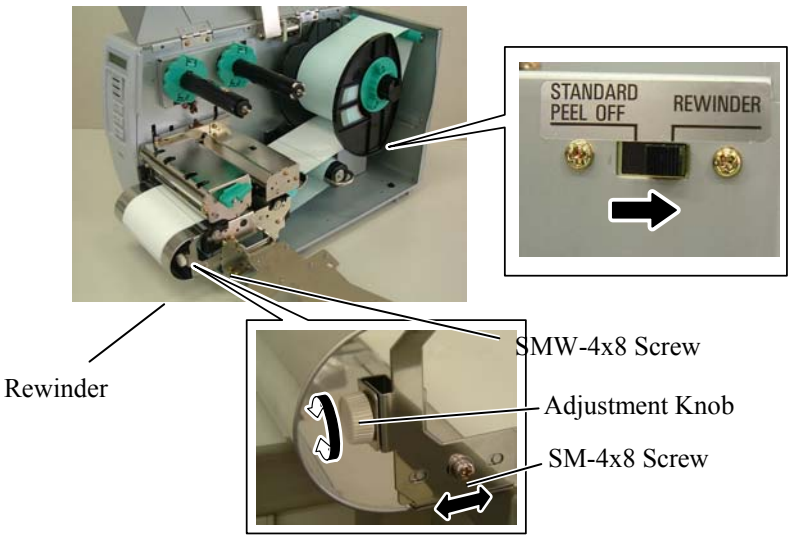
NOTE:

When using the Rotary Cutter, be sure to install the Ribbon Saving Module (CE-CR4-01). Failure to do this may cause a paper jam or ribbon error.

Build-in rewinder mode

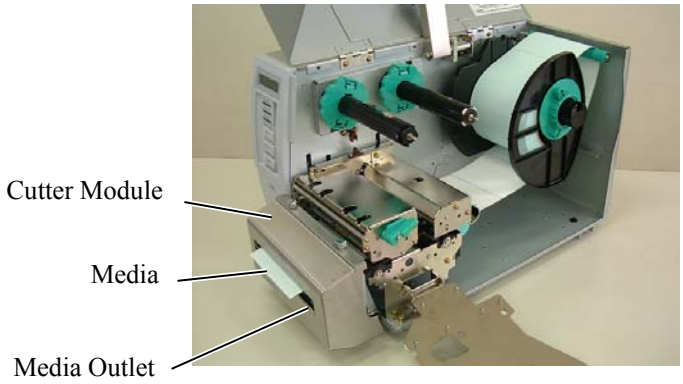
The Rewinder Assembly of the Strip Module can be used in batch mode to take up the printed media as a Built-in Rewinder.

(1) Remove the two Black Screws to detach the Front Plate.
(2) Attach the Rewinder Guide Plate enclosed with the optional Strip Module to the Strip Plate with the SMW-4x8 sems screws.
(3) Insert the media under the Rewinder Guide Plate.
(4) Wind the media onto the Take-up Spool and fix it in position with the Take-up Clip.
(5) Rotate the Take-up Spool counterclockwise a few times to remove any slack in the media.
(6) Set the Selection Switch mounted on the Rewinder Assembly to **REWINDER** position.



Cut mode

When the optional Cutter Module is fitted, the media is automatically cut. A swing cutter and a rotary cutter are available as an option, but they are used in the same way.
Insert the leading edge of the media into the Media Outlet of the Cutter Module.



13. If the loaded media is direct thermal media (a chemically treated surface), the media loading procedure is now completed. Close the Ribbon Shaft Holder Plate, and turn the Head Lever to **Lock** position to close. Then, close the Top Cover.
If the media is thermal transfer media, it is also necessary to load a ribbon. Refer to Section 2.8 Loading the Ribbon.

2.8 Loading the Ribbon

WARNING!

1. *Do not touch any moving parts. To reduce the risk of fingers, jewelry, clothing, etc., being drawn into the moving parts, be sure to load the ribbon once the printer has stopped moving completely.*
2. *The print head becomes hot immediately after printing. Allow it to cool before loading the ribbon.*
3. *To avoid injury, be careful not to trap your fingers while opening or closing the cover.*

CAUTION!

Be careful not touch the Print Head Element when raising the Print Head Block. Failure to do this may cause missing dots by static electricity or other print quality problems.

NOTES:

1. *When attaching the ribbon stoppers, make sure that the pinchers face into the printer.*
2. *Be sure to remove any slack in the ribbon when printing. Printing with a wrinkled ribbon will lower the print quality.*
3. *The Ribbon Sensor is mounted on the rear of the Print Head Block to detect a ribbon end. When a ribbon end is detected, "NO RIBBON" message will appear on the display and the ERROR LED will illuminate.*

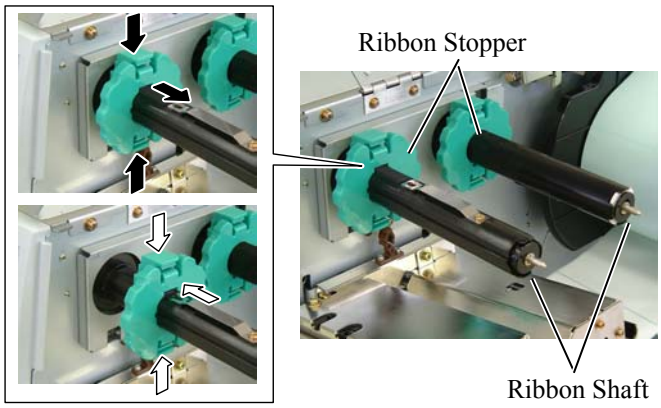
NOTE:

Ribbon loss per ribbon saving varies according to the relation between the outer roll diameter of the used ribbon and the print speed.

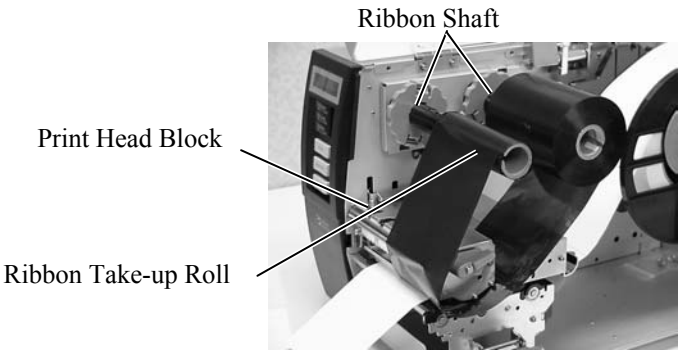
Print speed	Ribbon loss/Ribbon saving
3"/sec.	Approx. 6 mm
6"/sec.	Approx. 10 mm
10"/sec.	Approx. 20 mm

There are two types of media available for printing on: these are thermal transfer media and direct thermal media (a chemically treated surface). DO NOT LOAD a ribbon when using a direct thermal media.

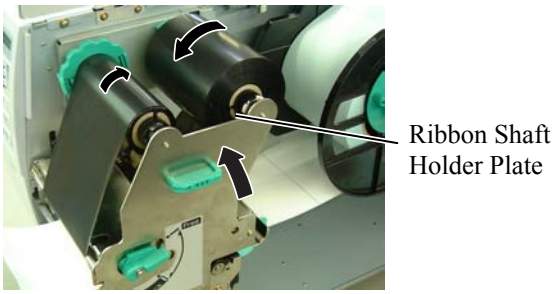
1. Grasp the tabs on the top and bottom of the Ribbon Stoppers and move the Ribbon Stoppers back to the end of the Ribbon Shaft.



2. Leaving plenty of slack between the ribbon spools, place the ribbon onto the Ribbon Shafts as shown below.



3. Slide the Ribbon Stoppers along the Ribbon Shafts to a position where the ribbon is centered when fitted.
4. Lower the Print Head Block and set the Ribbon Shaft Holder Plate aligning its holes with the Ribbon Shafts.
5. Take up any slack in the ribbon. Wind the leading tape onto the ribbon take-up roll until the ink ribbon can be seen from the front of the printer.



6. Turn the Head Lever to **Lock** position to close the Print Head.
7. Close the Top Cover.

■ **Auto Ribbon Saving Mode**

When the auto ribbon saving function is selected, it will be activated to reduce ribbon loss when a no print area extends more than 20 mm (3 or 6 ips) or 30 mm (10 ips). For further information on this function, please ask a Century Systems authorized service representative.

2.9 Inserting the Optional PCMCIA Cards

CAUTION!

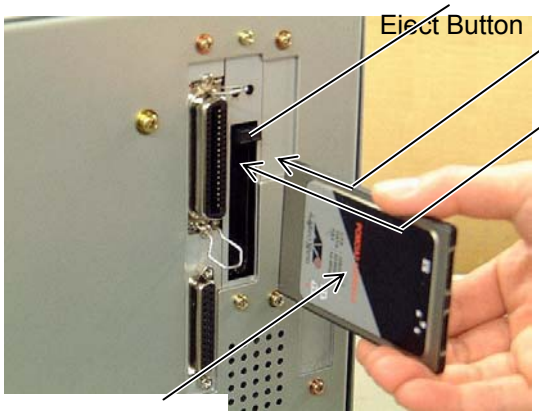
1. *To protect PC cards, discharge static electricity from your body by touching the metal cabinet of the printer before touching the card.*
2. *Before inserting or removing a PCMCIA card make sure that the printer's power is turned off.*
3. *Be sure to protect PCMCIA Cards when not in use by putting them into their protective covers.*
4. *Do not subject the card to any shocks or excessive force nor expose the card to extremes in temperature or humidity.*
5. *The card may be inserted into the slot halfway even in the wrong orientation. However, the slot is safety designed so that the card will not seat against the connector pins.*

NOTE:
Reading a read-only-type flash memory is possible if it has been used on the Century Systems printer, such as B-472 and B-572.

When the optional PCMCIA Interface Board is installed into the printer, there will be two PCMCIA slots available as shown in the figure below. This allows the use of Flash Memory type Cards or I/O Cards such as LAN Cards. The following paragraphs outline how to insert PCMCIA cards.

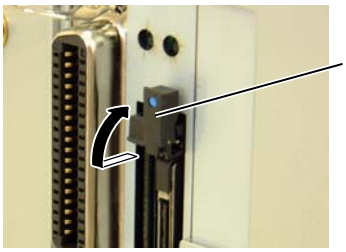
1. Make sure that the printer's Power Switch is in the OFF position.

2. Hold the PCMCIA Card so that the side with the model name faces left. Insert the card into the proper slot until the Eject Button pops out.



Model Name Printed Side

3. Slightly pull and fold the Eject Button upward.



4. The following PCMCIA cards can be used.

Type	Maker	Description	Remarks
ATA Card	San Disk, Hitachi	A card conforming to the PC card ATA standard	----------
LAN Card	3 COM	3CCE589ET Series	Install into the slot (2) only. (This card installed into the slot (1) will not work.)
Flash Memory Card (4 MB)	Maxell	EF-4M-TB CC	Read/Write
	Maxell	EF-4M-TB DC	
	Centennial Technologies INC.	FL04M-15-11119-03	
	INTEL	IMC004FLSA	Read (See NOTE.)
	Simple TECNOLOGY	STI-FL/4A	
	Mitsubishi	MF84M1-G7DAT01	
	PC Card KING MAX	FJN-004M6C	
	Centennial Technologies Inc.	FL04M-20-11138-67	
	PC Card	FJP-004M6R	
	Mitsubishi	MF84M1-GMCAV01	
Flash Memory Card (1 MB)	Maxell	EF-1M-TB AA	
	Mitsubishi	MF81M1-GBDAT01	

2.10 Test Print

A print test should be performed to check that the printer is operating correctly.

The following paragraphs guide you through the diagnostic procedure for test label printing. Please follow the step-by-step procedures exactly for best results.

1. Use label stock for the test print. For best results, use labels that are 76 mm or longer in length.

2. Press and hold the **[FEED]** and **[PAUSE]** keys while turning on the printer power switch. The LCD Message Display will show the following message.

```
<1>DIAG.   1.0A
```

3. Press the **[FEED]** key three times to advance to the test print mode as indicated by the following message in the LCD Message Display.

```
<4>TEST PRINT
```

4. Press the **[PAUSE]** key and the print condition setting display will appear.

```
<4>TEST PRINT
PRINT CONDITION
```

5. Press the **[PAUSE]** key and the issue count setting display will appear. Set the issue count with the **[FEED]** or **[RESTART]** key.

```
<4>TEST PRINT
ISSUE COUNT   1
```

6. Press the **[PAUSE]** key and the print speed setting display will appear. Set the print speed with the **[FEED]** or **[RESTART]** key.

```
<4>TEST PRINT
PRINT SPEED 6"/s
```

7. Press the **[PAUSE]** key and the sensor type setting display will appear. Select the sensor type with the **[FEED]** or **[RESTART]** key.

```
<4>TEST PRINT
SENSOR  TRANS.
```

8. Press the **[PAUSE]** key and the print mode setting display will appear. Select the print mode with the **[FEED]** or **[RESTART]** key.

```
<4>TEST PRINT
PRT TYPE TRANSFR
```

NOTES:

1. *Select the sensor type which matches the media being used. Basically, the Reflective Sensor (Black Mark Sensor) is for tag paper, and the Transmissive Sensor (Feed Gap Sensor) is for labels.*
2. *Select the print mode which matches the media being used. Basically, the thermal transfer is with ribbon, and the thermal direct is without ribbon.*

2.10 Test Print (Cont.)

9. Press the **[PAUSE]** key and the issue mode setting display will appear. Select the issue mode with the **[FEED]** or **[RESTART]** key.

```
<4>TEST PRINT
TYPE [S]NO CUT
```

10. Press the **[PAUSE]** key and the media size setting display will appear. Select the media size with the **[FEED]** or **[RESTART]** key.

```
<4>TEST PRINT
LABEL LEN.  76mm
```

11. Press the **[PAUSE]** key and the paper feed setting display will appear. Select whether or not a paper feed is performed with the **[FEED]** or **[RESTART]** key.

```
<4>TEST PRINT
PAPER   FEED
```

NOTE:
When PAPER FEED is selected, the printer feeds the media to the correct print start position. If the print start position adjustment is unnecessary, select PAPER NO FEED and save the media.

12. When the **[PAUSE]** key is pressed, one blank media will be issued. Then the LCD Message Display will return to showing the test print start message.

```
<4>TEST PRINT
```

13. Press the **[PAUSE]** key and then **[FEED]** key. When pressing the **[PAUSE]** key, the printer will print the specified issue counts of the slant lines (1 dot).

```
<4>TEST PRINT
SLANT LINE (1DOT)
```

14. Press the **[FEED]** key and **[PAUSE]** key, and the printer will print the specified issue counts of the slant lines (3 dots).

```
<4>TEST PRINT
SLANT LINE (3DOT)
```

15. Press the **[FEED]** key and **[PAUSE]** key, and the printer will print the specified issue counts of the characters of various sizes.

```
<4>TEST PRINT
CHARACTERS
```

16. Press the **[FEED]** key and **[PAUSE]** key, and the printer will print the specified issue counts of the bar codes.

```
<4>TEST PRINT
BARCODE
```

NOTE:
*If the **[FEED]** key is pressed after the blank labels are printed, the printer will enter the Factory Test mode. To exit from the Factory Test mode, press the **[PAUSE]** key.*

17. Press the **[FEED]** key and **[PAUSE]** key, and the printer will print the specified issue counts of blank labels.

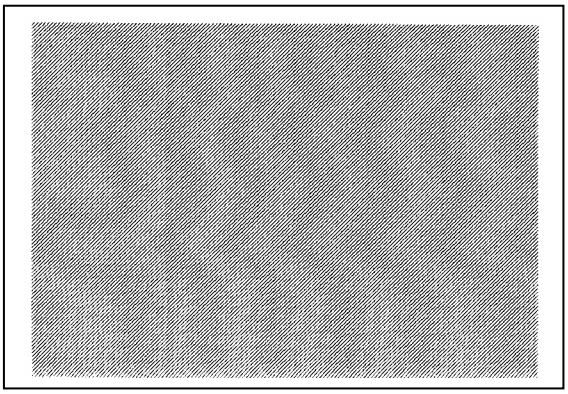
```
<4>TEST PRINT
NON PRINTING
```

18. Press the **[PAUSE]** key and the LCD Message Display will return to showing the test print start message.

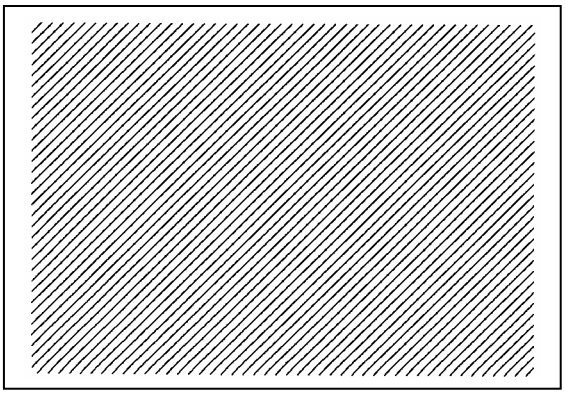
2.10 Test Print (Cont.)

19. When you have finished performing the test print operation, turn the printer's power OFF then back to ON and check that the LCD Message Display shows ON LINE and that the ON LINE and POWER LED lights are illuminated.

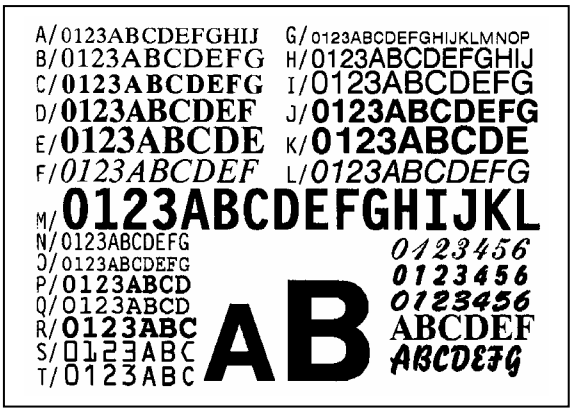
Sample of the slant line (1 dot) test print label



Sample of the slant line (3 dots) test print label

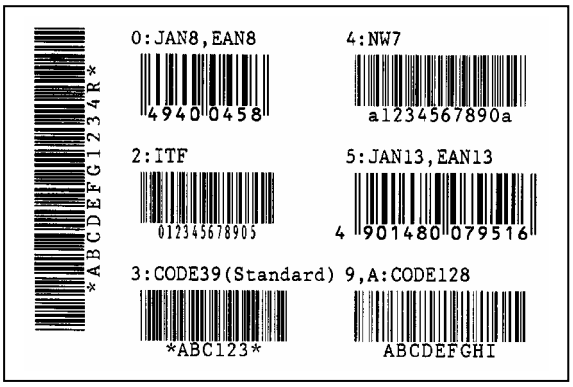


Sample of the character test print label

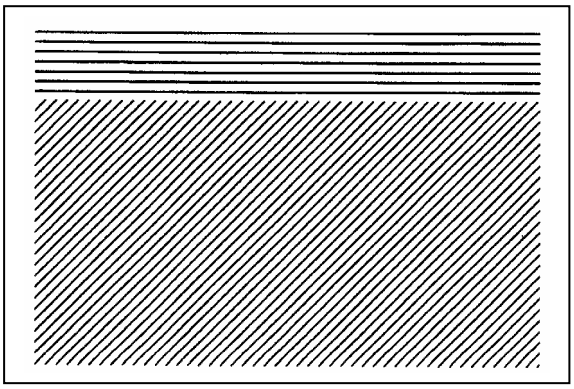


2.10 Test Print (Cont.)

Sample of the bar code test print label



Sample of the factory test label

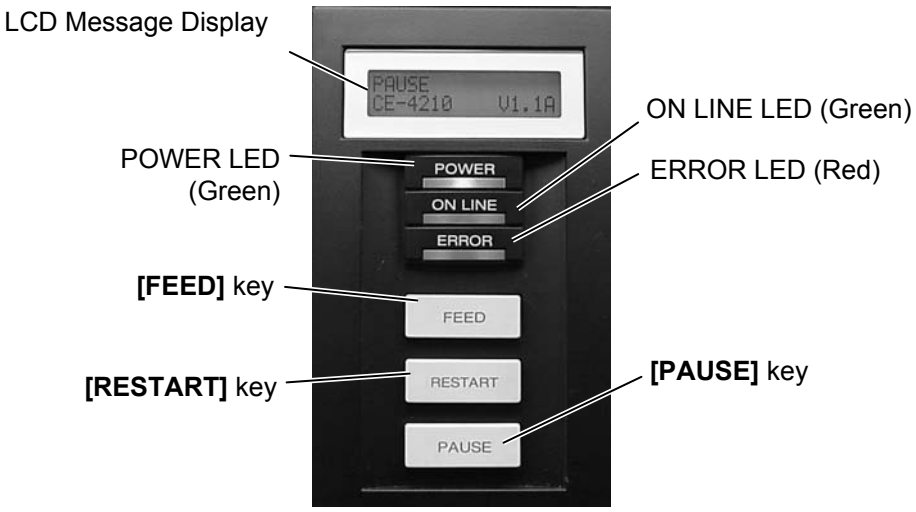


3. ON LINE MODE

This chapter describes usage of the keys on the Operation Panel in On Line mode.
When the printer is in On Line mode and connected to a host computer, the normal operation of printing images on labels or tags can be accomplished.

3.1 Operation Panel

- The figure below illustrates the operation panel and key functions.



The LCD Message Display shows messages in alphanumeric characters and symbols to indicate the printer's current status. Up to 32 characters can be displayed on two lines.

There are three LED lights on the operation panel.

LED	Illuminates when…	Flashes when…
POWER	The printer is turned on.	-----
ON LINE	The printer is ready to print.	The printer is communicating with your computer.
ERROR	Any error occurs with the printer.	The ribbon is nearly over. (See NOTE.)

NOTE:
Flashes only when the Ribbon Near End Detection function is selected.

There are three keys on the operation panel.

PAUSE	Used to stop printing temporarily.
RESTART	Used to restart printing.
FEED	Used to feed the media.

NOTE:
*Use the **[RESTART]** key to resume printing after a pause, or after clearing an error.*

3.2 Operation

When the printer is turned on, the "ON LINE" message appears on the LCD Message Display. It is shown during standby or normal printing.

1. The printer is turned on, standing by, or printing.

```
ON LINE
CE-4210        V1.0A
```

2. If any error occurs during printing, an error message appears. The printer stops printing automatically. (The number on the right side shows the remaining number of media to be printed.)

```
NO PAPER    125
CE-4210        V1.0A
```

3. To clear the error, press the **[RESTART]** key. The printer resumes printing.

```
ON LINE
CE-4210        V1.0A
```

4. If the **[PAUSE]** key is pressed during printing, the printer stops printing temporarily. (The number on the right side shows the remaining number of media to be printed.)

```
PAUSE       52
CE-4210        V1.0A
```

5. When the **[RESTART]** key is pressed, the printer resumes printing.

```
ON LINE
CE-4210        V1.0A
```

3.3 Reset

A reset operation clears the print data sent from the computer to the printer, and returns the printer to an idle condition.

1. The printer is turned on, standing by, or printing.

```
ON LINE
CE-4210        V1.0A
```

2. To stop printing, or clear the data sent from the computer, press the **[PAUSE]** key. The printer stops printing.

```
PAUSE       52
CE-4210        V1.0A
```

3. Press and hold the **[RESTART]** key for 3 seconds or longer.

```
<1>RESET
```

4. Press the **[PAUSE]** key. The data sent from the computer will be cleared, and the printer returns to an idle condition.

```
ON LINE
CE-4210        V1.0A
```

NOTE:

If the [RESTART] key is held for less than 3 seconds when the printer is in an error or pause state, the printer restarts printing. However, when a communication error or command error occurs,

3.4 Dump Mode

In Dump mode, any characters sent from the host computer will be printed. Received characters are expressed in hexadecimal values. This allows the user to verify programming commands and debug the program.

(1) The printer is turned on, standing by, or printing.

```
ON LINE
CE-4210          V1.1A
```

(2) Press the **[PAUSE]** key.

```
PAUSE      52
CE-4210          V1.1A
```

← The number of unprinted media (See ***NOTE***.)

(3) During the Pause state, press and hold the **[RESTART]** key for 3 seconds or more.
The display shows "<1> RESET".

```
<1>RESET
```

(4) Press the **[FEED]** key. The display shows "<2>PARAMETER SET".

```
<2>PARAMETER SET
```

(5) Press the **[FEED]** key. The display shows "<3>ADJUST SET".

```
<3>ADJUST SET
```

(6) Press the **[FEED]** key. The display shows "<4>DUMP MODE". Press the **[PAUSE]** key to enter the Dump Mode.

```
<4>DUMP MODE
BUFFER  RS-232C
```

(7) Select the receive buffer to be dumped with the **[FEED]** or **[RESTART]** key.

```
<4>DUMP MODE
BUFFER  RS-232C
```

[RESTART] ↑ / ↓ **[FEED]**

- RS-232C: RS-232C Receive Buffer
- CENTRO: Centronics Receive Buffer
- NETWORK: Network Interface Receive Buffer
- BASIC 1: BASIC Interpreter (I/F → Interpreter buffer)
- BASIC 2: BASIC Interpreter (Interpreter → Printer buffer)
- USB: USB Receive Buffer

(8) Select the printing method with the **[FEED]** or **[RESTART]** key.

[RESTART] ↑ / ↓ **[FEED]**

ON DEMAND	The printer prints 166 lines (approx. 50cm) and then pauses printing.
ALL	The printer prints all buffer data, and then stops printing.

(9) Press the **[PAUSE]** key to start printing. The printer prints the data in the selected receive buffer.

```
NOW PRINTING…
```

(10) After completing the printing, the display returns to "<4>DUMP MODE".

```
<4>DUMP MODE
```

(11) Reset the printer by turning the power off and on. The display shows "ON LINE".

```
ON LINE
```

NOTE:

*When the **[PAUSE]** key is pressed during printing, the number of unprinted media is displayed.*

The data in the receive buffer is printed as follows:

```
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
7B 41 58 3B 2B 30 30 30 2C 2B 30 30 30 2C 2B 30   {AX;+000,+000,+0
30 7C 7D 7B 44 30 37 37 30 2C 31 31 30 30 2C 30   0|}{D0760,1100,0
37 34 30 7C 7D 7B 43 7C 7D 7B 4C 43 3B 30 30 33   740|}{C|}{LC;003
30 2C 30 30 32 30 2C 30 30 33 30 2C 30 36 36 30   0,0020,0030,0660
2C 30 2C 32 7C 7D 7B 4C 43 3B 30 30 37 30 2C 30   ,0,2|}{LC;0070,0
30 32 30 2C 30 30 37 30 2C 30 36 36 30 2C 30 2C   020,0070,0660,0,
39 7C 7D 7B 4C 43 3B 30 30 35 30 2C 30 30 32 30   9|}{LC;0050,0020
                                                  :
                                                  :
                                                  :
44 45 46 47 48 49 4A 7C 7D 7B 50 43 31 30 3B 30   DEFGHIJ|}{PC10;0
33 35 30 2C 30 34 30 30 2C 31 2C 31 2C 4B 2C 30   350,0400,1,1,K,0
30 2C 42 3D 41 42 43 44 65 66 67 68 69 6A 6B 6C   0,B=ABCDefghijkl

6D 6E 6F 70 7C 7D 7B 50 56 30 32 3B 30 33 33 30   mnop|}{PV02;0330
2C 30 36 36 30 2C 30 32 37 30 2C 30 32 35 30 2C   ,0660,0270,0250,
41 2C 30 30 2C 42 3D 42 7C 7D 7B 50 56 30 33 3B   A,00,B=B|}{PV03;
                                                  :
                                                  :
                                                  :
3B 30 39 30 30 2C 30 31 38 30 2C 54 2C 48 2C 30   ;0900,0180,T,H,0
35 2C 41 2C 30 3D 31 32 33 34 35 36 37 38 39 30   5,A,0=1234567890
41 42 43 44 45 7C 7D 00 00 00 00 00 00 00 00 00   ABCDE|}
                                                  :
                                                  :
```

Feed direction

Print Conditions

- Printing width: 4.2 inches
- Sensor selection: None
- Print speed: 6”/sec. (Eagle4), 5”/sec. (Eagle5)
- Printing mode: Depends on the selection in use.
- 16 bytes/line
- Data is printed in the order from the new one to the old one.
- Data specified by the receive buffer write pointer will be printed in boldface.

Receive buffer size

	Eagle4	Eagle5
RS-232C	1MB (65536 lines)	6MB (393216 lines)
Centronics	1MB (65536 lines)	6MB (393216 lines)
Network Interface	1MB (65536 lines)	6MB (393216 lines)
BASIC 1	4KB (256 lines)	4KB (256 lines)
BASIC 2	4KB (256 lines)	4KB (256 lines)
USB	1MB (65536 lines)	6MB (393216 lines)

Required label length

	Eagle4	Eagle5
RS-232C	198.2m	1189.2m
Centronics	198.2m	1189.2m
Network Interface	198.2m	1189.2m
BASIC 1	1m	1m
BASIC 2	1m	1m
USB	198.2m	1189.2m

NOTE:

*If an error occurs during dumping, the printer will display an error message and stop printing. The error can be cleared by pressing the **[PAUSE]** key, and then the display will show “<4>DUMP MODE” again.*
After recovery from the error the printer will not start printing automatically.

4. MAINTENANCE

This chapter describes how to perform routine maintenance.
To ensure the continuous high quality operation of the printer, you should perform a regular maintenance routine. For high throughput it should be done on a daily basis. For low throughput it should be done on a weekly basis.

WARNING!

1. *Be sure to disconnect the power cord before performing maintenance. Failure to do this may cause an electric shock.*
2. *To avoid injury, be careful not to pinch your fingers while opening or closing the cover and print head block.*
3. *The print head becomes hot immediately after printing. Allow it to cool before performing any maintenance.*
4. *Do not pour water directly onto the printer.*

4.1 Cleaning

To maintain the printer performance and print quality, please clean the printer regularly, or whenever the media or ribbon is replaced.

4.1.1 Print Head/Platen/ Sensors

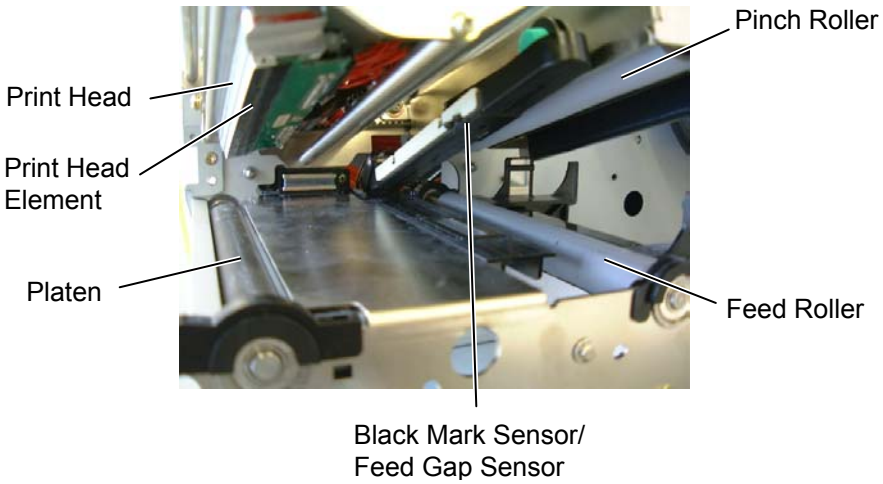
CAUTION!

1. *Do not allow any hard objects to touch the Print Head or Platen, as this may cause damage to them.*
2. *Do not use any volatile solvent including thinner and benzene, as this may cause discoloration to the cover, print failure, or breakdown of the printer.*
3. *Do not touch the Print Head Element with bare hands, as static may damage the Print Head.*
4. *Be sure to use the Print Head Cleaner enclosed with this printer. Failure to do this may shorten the Print Head life.*

NOTE:

Please purchase the Print Head Cleaner (PTJG) from your authorized Century Systems service representative.

1. Turn off the power and unplug the printer.
2. Open the Top Cover.
3. Turn the Head Lever to **Free** position, then release the Ribbon Shaft Holder Plate.
4. Open the Print Head Block.
5. Remove the ribbon and media.
6. Clean the Print Head Element with a Print Head Cleaner or a cotton swab or soft cloth slightly moistened with alcohol.



7. Wipe the Platen, Feed Roller, and Pinch Roller with a soft cloth slightly moistened with alcohol. Remove dust or foreign substances from the internal part of the printer.
8. Wipe the Feed Gap Sensor and Black Mark Sensor with a dry soft cloth.

4.1.2 Covers and Panels

CAUTION!

1. *DO NOT POUR WATER directly onto the printer.*
2. *DO NOT APPLY cleaner or detergent directly onto any cover or panel.*
3. *NEVER USE THINNER OR OTHER VOLATILE SOLVENT on the plastic covers.*
4. *DO NOT clean the panel, covers, or the supply window with alcohol as it may cause them to discolor, loose their shape or develop structural*

Wipe the covers and panels with a dry soft cloth or a cloth slightly moistened with mild detergent solution.

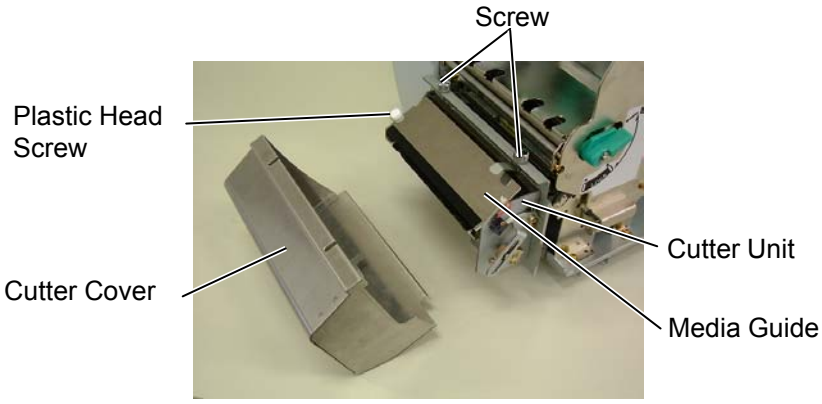
4.1.3 Optional Cutter Module

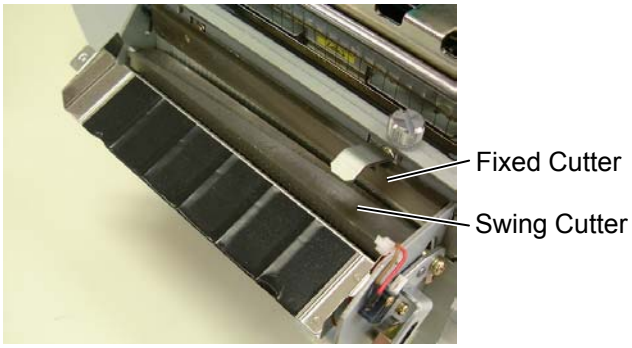
WARNING!

1. *Be sure to turn the power off before cleaning the Cutter Module.*
2. *As the cutter blade is sharp, care should be taken not to injure yourself when cleaning.*

The scissor cutter and rotary cutter are available as an option. They are both cleaned in the same way. When removing the Cutter Cover of the rotary cutter unit, remove the screws from the bottom of the cover.

1. Loosen the two screws to remove the Cutter Cover.
2. Remove the Plastic Head Screw to detach the Media Guide.
3. Remove the jammed paper.
4. Clean the Cutter with a soft cloth slightly moistened with alcohol.
5. Reassemble the Cutter Module in the reverse order of removal.





4.2 Care/Handling of the Media and Ribbon

CAUTION!

Be sure to carefully review and understand the Supply Manual. Use only media and ribbons that meet specified requirements. Use of non-specified media and ribbons may shorten the head life and result in problems with bar code readability or print quality. All media and ribbons should be handled with care to avoid any damage to the media, ribbons or printer. Read the guidelines in this section carefully.

- Do not store the media or ribbon for longer than the manufacturer's recommended shelf life.
- Store media rolls on the flat end. Do not store them on the curved sides as this might flatten that side causing erratic media advance and poor print quality.
- Store the media in plastic bags and always reseal after opening. Unprotected media can get dirty and the extra abrasion from the dust and dirt particles will shorten the print head life.
- Store the media and ribbon in a cool, dry place. Avoid areas where they would be exposed to direct sunlight, high temperature, high humidity, dust or gas.
- The thermal paper used for direct thermal printing must not have specifications which exceed Na^+ 800 ppm, K^+ 250 ppm and Cl^- 500 ppm.
- Some ink used on pre-printed media may contain ingredients which shorten the print head's product life. Do not use labels pre-printed with ink which contain hard substances such as carbonic calcium ($CaCO_3$) and kaolin (Al_2O_3, $2SiO_2$, $2H_2O$).

For further information, please contact your local distributor or your media and ribbon manufacturers.

5. TROUBLESHOOTING

This chapter lists the error messages, possible problems, and their solutions.

WARNING!
If a problem cannot be solved by taking the actions described in this chapter, do not attempt to repair the printer. Turn off and unplug the printer, then contact an authorized Century Systems service representative for assistance.

5.1 Error Messages

NOTES:
- *If an error is not cleared by pressing the **[RESTART]** key, turn the printer off and then on.*
- *After the printer is turned off, all print data in the printer is cleared.*
- *"****" indicates the number of unprinted media. Up to 9999 (in pieces).*

Error Messages	Problems/Causes	Solutions
HEAD OPEN	The Print Head Block is opened in Online mode.	Close the Print Head Block.
HEAD OPEN ****	Feeding or printing has been attempted with the Print Head Block open.	Close the Print Head Block. Then press the **[RESTART]** key.
COMMS ERROR	A communication error has occurred.	Make sure the interface cable is correctly connected to the printer and the host, and the host is turned on.
PAPER JAM ****	1. The media is jammed in the media path. The media is not fed smoothly. 2. A wrong Media Sensor is selected for the media being used. 3. The Black Mark Sensor is not correctly aligned with the Black Mark on the media. 4. Size of the loaded media is different from the programmed size. 5. The Feed Gap Sensor cannot distinguish the print area from a label gap.	1. Remove the jammed media, and clean the Platen. Then reload the media correctly. Finally press the **[RESTART]** key. 2. Turn the printer off and then on. Then select the Media Sensor for the media being used. Finally resend the print job. 3. Adjust the sensor position. Then press the **[RESTART]** key. 4. Replace the loaded media with one that matches the programmed size then press the **[RESTART]** key, or turn the printer off and then on, select a programmed size that matches the loaded media. Finally resend the print job. 5. Refer to Section 5.4 to set the threshold. If this does not solve the problem, turn off the printer, and call a Century Systems authorized service representative.
CUTTER ERROR **** (Only when the cutter module is installed on the printer.)	The media is jammed in the cutter.	Remove the jammed media. Then press the **[RESTART]** key. If this does not solve the problem, turn off the printer, and call a Century Systems authorized service representative.

5.1 Error Messages (Cont.)

Error Messages	Problems/Cause	Solutions
NO PAPER ****	1. The media has run out. 2. The media is not loaded properly. 3. The media is slack.	1. Load new media. Then press the **[RESTART]** key. 2. Reload the media correctly. Then press the **[RESTART]** key. 3. Take up any slack in the media.
RIBBON ERROR ****	The ribbon is not fed properly.	Remove the ribbon, and check the status of the ribbon. Replace the ribbon, if necessary. If the problem is not solved, turn off the printer, and call a Century Systems authorized service representative.
NO RIBBON ******	The ribbon has run out.	Load a new ribbon. Then press the **[RESTART]** key.
REWIND FULL ******	The Built-In Rewinder Unit is full.	Remove the backing paper from the Built-In Rewinder Unit. Then press the **[RESTART]** key.
EXCESS HEAD TEMP	The Print Head has overheated.	Turn off the printer, and allow it to cool down (about 3 minutes). If this does not solve the problem, call a Century Systems authorized service representative.
HEAD ERROR	There is a problem with the Print Head.	Replace the Print Head.
Other error messages	A hardware or software problem may have occurred.	Turn the printer off and then on. If this does not solve the problem, turn off the printer again, and call a Century Systems authorized service representative.

5.2 Possible Problems

This section describes problems that may occur when using the printer, and their causes and solutions.

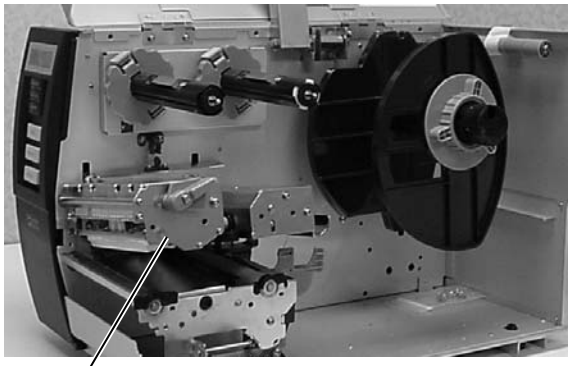
Possible Problems	Causes	Solutions
The printer will not turn on.	1. The Power Cord is disconnected. 2. The AC outlet is not functioning correctly. 3. The fuse has blown, or the circuit breaker has tripped.	1. Plug in the Power Cord. 2. Test power outlet with a power cord from another electric appliance. 3. Check the fuse or breaker.
The media is not fed.	1. The media is not loaded properly. 2. The printer is in an error condition.	1. Load the media properly. 2. Solve the error in the message display. (See Section 5.1 for more detail.)
Nothing is printed on the media.	1. The media is not loaded properly. 2. The ribbon is not loaded properly. 3. The print head is not installed properly. 4. The ribbon and media are not matched.	1. Load the media properly. 2. Load the ribbon properly. 3. Install the print head properly. Close the Print Head Block. 4. Select an appropriate ribbon for the media type being used.
The printed image is blurred.	1. The ribbon and media are not matched. 2. The Print Head is not clean.	1. Select an appropriate ribbon for the media type being used. 2. Clean the print head using the Print Head Cleaner or a cotton swab slightly moistened with ethyl alcohol.
The cutter does not cut.	1. The Cutter Cover is not attached properly. 2. The media is jammed in the Cutter. 3. The cutter blade is dirty.	1. Attach the Cutter Cover properly. 2. Remove the jammed paper. 3. Clean the cutter blade.

5.3 Removing Jammed Media

This section describes in detail how to remove jammed media from the printer.

CAUTION!
Do not use any tool that may damage the Print Head.

1. Turn off and unplug the printer.
2. Open the Top Cover.
3. Turn the Head Lever to **Free** position, then open the Ribbon Shaft Holder Plate.
4. Open the Print Head Block.
5. Remove the ribbon and media.



6. Remove the jammed media from the printer. DO NOT USE any sharp implements or tools as these could damage the printer.
7. Clean the Print Head and Platen, then remove any further dust or foreign substances.
8. Paper jams in the Cutter Unit can be caused by wear or residual glue from label stock on the cutter. Do not use non-specified media in the cutter.

NOTE:
If you get frequent jams in the cutter, contact a Century Systems authorized service representative.

5.4 Threshold Setting

NOTES:

1. *If the **[PAUSE]** key is released within 3 seconds while in the pause state, the paper will not feed.*
2. *Failure to feed more than 1.5 labels may result in an incorrect threshold setting.*
3. *While the Print Head Block is raised, the **[PAUSE]** key does not work.*
4. *A paper end error cannot be detected during paper feed.*
5. *Selecting the Transmissive Sensor (for pre-printed labels) within software commands allows the printer to detect the proper print start position even when using pre-printed labels.*
6. *If using the Transmissive Sensor and the printer continues to print out of position even after setting the threshold, contact a Century Systems service representative.*

To maintain a constant print position the printer uses the Transmissive Sensor to detect the gap between labels by measuring the amount of light passing through the media. When the media is pre-printed, the darker (or more dense) inks can interfere with this process, causing paper jam errors. To get around this problem a minimum threshold can be set for the sensor in the following way.

■ **Threshold setting procedure**

1. Turn the power ON. The printer is in stand by mode.

```
ON LINE
CE-4210     V1.0A
```

2. Load a pre-printed media roll.

3. Press the **[PAUSE]** key.

```
PAUSE
CE-4210     V1.0A
```

4. The printer enters the pause mode.

5. Press and hold the **[PAUSE]** key for at least 3 seconds in the pause state.

```
TRANSMISSIVE
CE-4210     V1.0A
```

6. The sensor type is displayed.

7. Select the sensor to be adjusted by pressing the **[FEED]** key.

```
REFLECTIVE
CE-4210     V1.0A
```
Black mark sensor

[FEED] key

```
TRANSMISSIVE
CE-4210     V1.0A
```
Feed gap sensor

8. Press and hold the **[PAUSE]** key until more than 1.5 labels (tags) have been issued.
The media will continue to be fed until the **[PAUSE]** key is released. (Threshold setting for the selected sensor is completed by this operation.)

```
PAUSE
CE-4210     V1.0A
```

9. Press the **[RESTART]** key.

```
ON LINE
CE-4210     V1.0A
```

10. The printer is in stand-by.

11. Send an issue command from the PC to the printer.

```
ON LINE
CE-4210     V1.0A
```

APPENDIX 1 SPECIFICATIONS

Appendix 1 describes the printer specifications and supplies for use on the Eagle 4 printer.

A1.1 Printer

The following are the printer specifications:

Item \ Model	Eagle 4 (CE-4210-QQ)	Eagle 4 (CE-4210-QP)
Supply voltage	AC100 – 120V, 50/60 Hz±10%	AC220 – 240V, 50 Hz±10%
Power consumption		
During a print job	1.6 A, 133 W maximum	1.0 A, 134 W maximum
During standby	0.18 A, 14 W maximum	0.13 A, 14 W maximum
Operating temperature range	5°C to 40°C (40°F to 104°F)	
Relative humidity	25% to 85% RH (no condensation)	
Resolution	8 dots/mm (203 dpi)	
Printing method	Thermal transfer or Thermal direct	
Printing speed	76.2 mm/sec. (3 inches/sec.) 152.4 mm/sec (6 inches/sec.) 254.0 mm/sec (10 inches/sec.) } For details, refer to Section A1.3.1.	
Available media width (including backing paper)	30.0 mm to 112.0 mm (1.2 inches to 4.4 inches)	
Effective print width (max.)	104.0 mm (4.1 inches)	
Issue mode	Batch Cut (Cut mode is enabled only when the optional Cutter Module is installed.) Strip (Strip mode is enabled only when the optional Strip Module is installed.)	
LCD Message display	16 characters × 2 lines	
Dimension (W × D × H)	291 mm × 460 mm × 308 mm (11.5” × 18.1” × 12.1”)	
Weight	39.7 lb (18 kg) (Media and ribbon are not included.)	
Available bar code types	JAN8, JAN13, EAN8, EAN8+2 digits, EAN8+5 digits, EAN13, EAN13+2 digits, EAN13+5 digits, UPC-E, UPC-E+2 digits, UPC-E+5 digits, UPC-A, UPC-A+2 digits, UPC-A+5 digits, MSI, ITF, NW-7, CODE39, CODE93, CODE128, EAN128, Industrial 2 to 5, Customer Bar Code, POSTNET, KIX CODE, RM4SCC (ROYAL MAIL 4STATE CUSTOMER CODE), RSS14	
Available two-dimensional code	Data Matrix, PDF417, QR code, Maxi Code, Micro PDF417, CP Code	
Available font	Times Roman (6 sizes), Helvetica (6 sizes), Presentation (1 size), Letter Gothic (1 size), Prestige Elite (2 sizes), Courier (2 sizes), OCR (2 types), Gothic (1 size), Outline font (4 types), Price font (3 types)	
Rotations	0°, 90°, 180°, 270°	
Standard interface	Serial interface (RS-232C) Parallel interface (Centronics)	
Optional interface	PCMCIA interface (CE-PCM-01) USB interface (CE-USB-01) LAN interface (CE-LAN-01) Expansion I/O interface (CE-CIO-01)	

NOTES:

- *QR Code® is a trademark of DENSO CORPORATION.*

A1.2 Options

Option Name	Type	Description
Scissor cutter module	CE-CS4-01	A stop and cut swing cutter.
Rotary cutter module	CE-CR4-01	Rotary cutter
Dispense module	CE-DM4-01	Enables peel and present operation or internal label rewinding. To purchase the strip module, please inquire at your local distributor.
Ribbon saving module	CE-RS4-01	This module moves the print head up and down by using a solenoid to minimize ribbon usage as far as possible.
Expansion I/O interface board	CE-CIO-01	Installing this board in the printer allows connection to an external device with the exclusive interface.
PCMCIA interface board	CE-PCM-01	This board enables the use of the following PCMCIA cards. LAN card: 3 COM 3CCE589ET (recommended) ATA card: Conforming to PC card ATA standard Flash memory card: 1MB and 4MB cards (See Section 2.9.)
Built-in LAN interface board	CE-LAN-01	This board enables the printer to be used in a LAN network.
USB interface board	CE-USB-01	Installing this board enables a connection to a PC which has a USB interface.

NOTE:

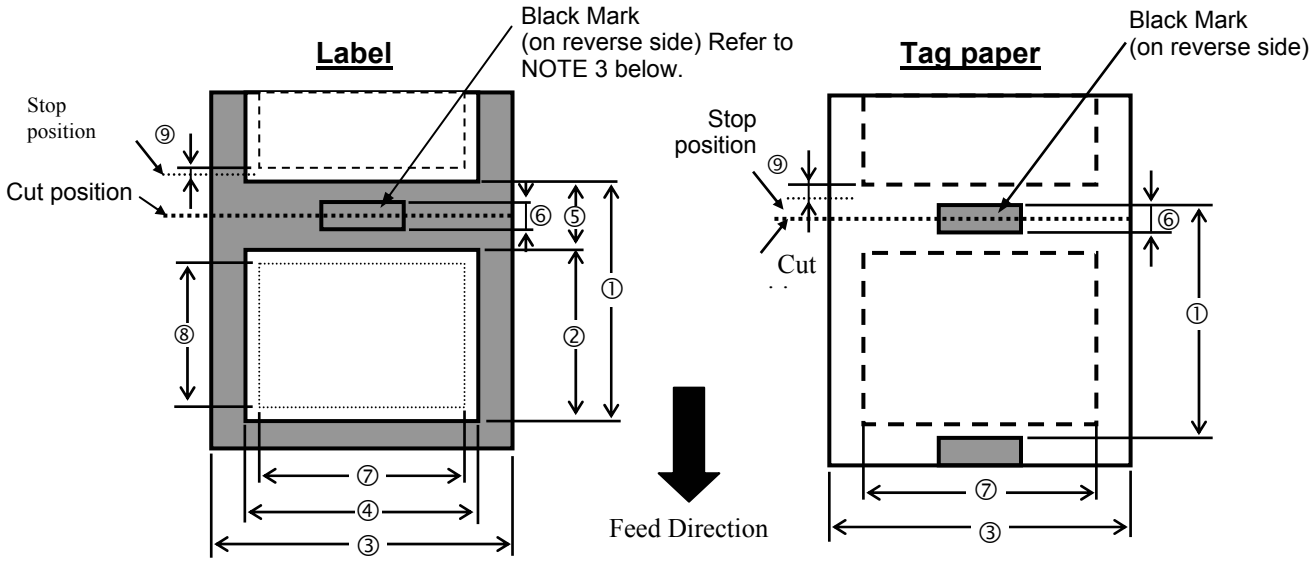
To purchase the optional kits, please contact the nearest authorized Century Systems representative.

A1.3 Media

Please make sure that the media being used is approved by Century Systems. The warranty does not apply when a problem is caused by using media that is not approved by Century Systems.
For information regarding Century Systems approved media, please contact a Century Systems authorized service representative.

A1.3.1 Media Type

Two types of media can be loaded for this thermal transfer and direct thermal printer: label or tag. The table below shows size and shape of the media available for this printer.



A1.3.1 Media Type (Cont.)

[Unit: mm]

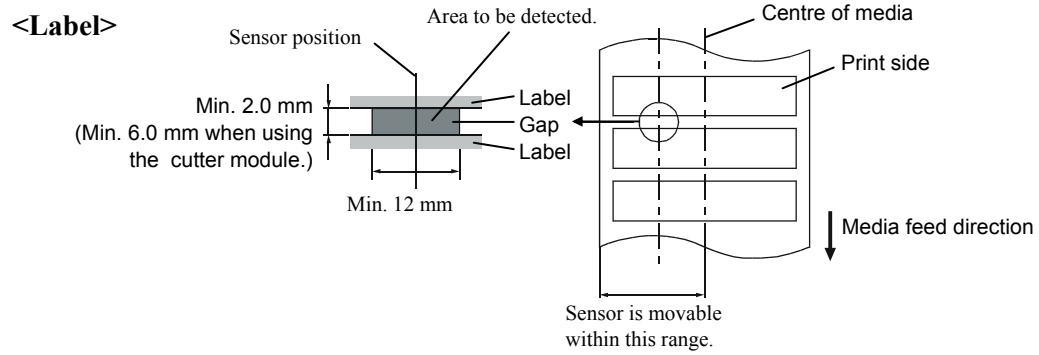
Item \ Label dispensing mode		Batch mode	Strip mode	Cut mode	
				Rotary cutter (*2)	Scissor cutter
① Media pitch	Label	10.0 – 1500.0	25.4 – 1500.0	3”/sec., 6”/sec.: 38.0 - 1500.0	38.0 – 1500.0
	Tag	10.0 – 1500.0	----	3”/sec., 6”/sec.: 30.0 – 1500.0	25.4 – 1500.0
② Label length		8.0 – 1498.0	23.4 – 1498.0	3”/sec., 6”/sec.: 32.0 – 1494.0	25.0 – 1494.0(*1)
③ Width including backing paper (*See NOTE 5.*)		30.0 – 112.0	50.0 – 112.0	30.0 – 112.0	
④ Label width (*See NOTE 5.*)		27.0 – 109.0	47.0 – 109.0	27.0 – 109.0	
⑤ Gap length		2.0 – 20.0		6.0 – 20.0	
⑥ Black mark length (Tag paper)		2.0 – 10.0			
⑦ Effective print width		10.0 – 104.0			
⑧ Effective print length	Label	6.0 – 1496.0	21.4 – 1496.0	3”/sec., 6”/sec.: 30.0 – 1492.0	23.0 – 1492.0
	Tag	8.0 – 1498.0	----	3”/sec., 6”/sec.: 28.0 – 1496.0	23.0 – 1496.0
⑨ Print speed up/slow down area		1.0			
Thickness	Label	0.13 – 0.17			
	Tag	0.15 – 0.29			
Maximum effective length for on the fly issue		1361.0			
Maximum outer roll diameter		Ø200			
Roll direction		Inside			
Inner core diameter		Ø76.2±0.3			

NOTES:

1. *To ensure print quality and print head life use only Century Systems specified media.*
2. *The media length specifications for use of the cutter are:*
   - **1: When issuing a label using the scissor cutter, label length should be 35.0 mm – (Gap length/2).*
   - **2: The rotary cutter does not support the print speed of 10”/sec.*
     When using the Rotary Cutter(CE-CR4-01), be sure to install the Ribbon Saving Module (CE-RS4-01).
     Failure to do this may cause a paper jam or ribbon error.
3. *When marking black marks on the label rolls, they should be marked at the gaps.*
4. *“On the fly issue” means that the printer can feed and print without stopping between labels.*
5. *There are restrictions in use of the media which is narrower than 50 mm. For details, refer to Century Systems service representative.*

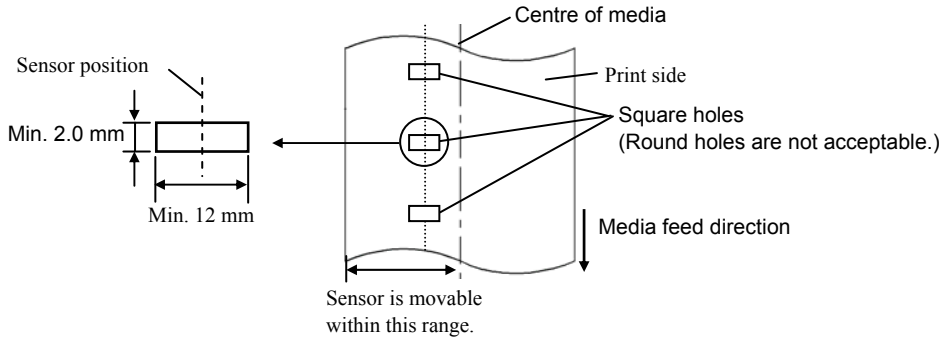
A1.3.2 Detection Area of the Transmissive Sensor

The Transmissive Sensor is movable from the centre to the left edge of media.
The Transmissive Sensor detects a gap between labels, as illustrated below.



A1.3.2 Detection Area of the Transmissive Sensor (Cont.)

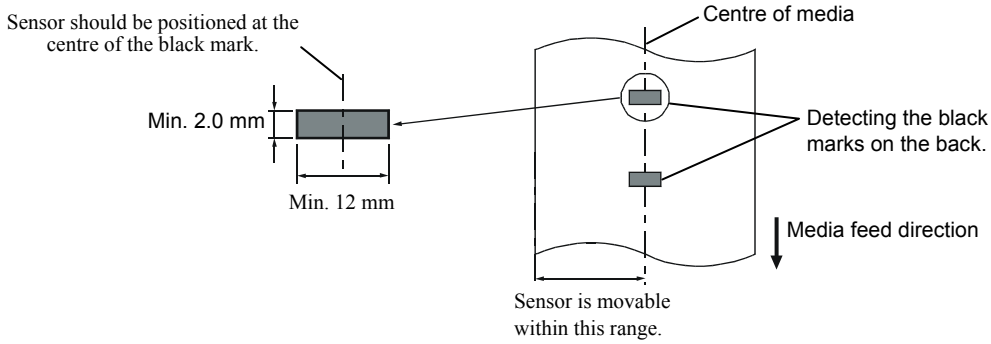
<Tag paper with square holes>



NOTE:
Round holes are not acceptable.

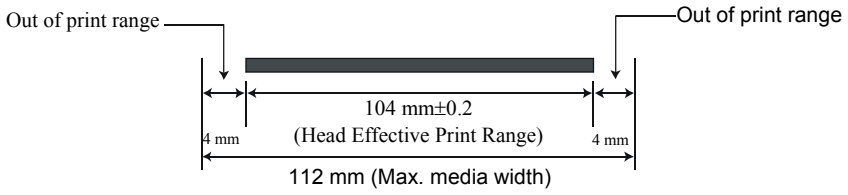
A1.3.3 Detection Area of the Reflective Sensor

The Reflective Sensor is movable from the centre to the left edge of media.
The reflection factor of the Black Mark must be 10% or lower with a waveform length of 950 nm.
The Reflective Sensor should be aligned with the centre of the Black Mark.



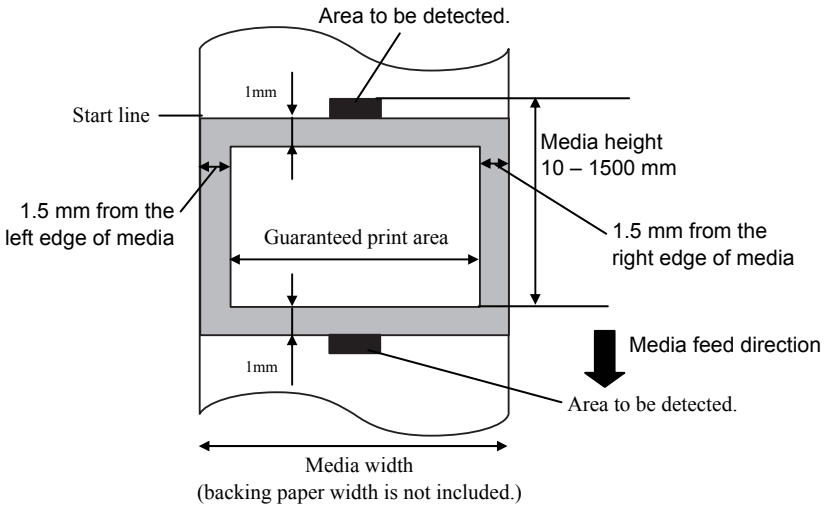
A1.3.4 Effective Print Area

The figure below illustrates the relation between the head effective print width and media width.



A1.3.4 Effective Print Area (Cont.)

The figure below shows the effective print area on the media.



NOTES:

1. *Be sure not to print on the 1.5-mm wide area from the media edges (shaded area in the above figure). Printing this area may cause ribbon wrinkles, resulting in a poor print quality of the guaranteed print area.*
2. *The centre of media is positioned at the centre of the Print Head.*
3. *Print quality in the 3-mm area from the print head stop position (including 1-mm non-printable area for print speed slow down) is not guaranteed.*

A1.4 Ribbon

Please make sure that the ribbon being used is approved by Century Systems. The warranty does not apply to any problem caused by using non-approved ribbons.
For information regarding Century Systems approved ribbon, please contact a Century Systems service representative.

Type	Spool type
Width	41 – 112 mm Recommended width is 41, 50, 68, 84, and 112 mm.
Length	600 m
Outside Diameter	ϕ90 mm (max.)

The table below shows the correlation between ribbon width and media width (backing paper is not included.)

Ribbon width	Media width	Ribbon width	Media width
41 mm	30 – 36 mm	84 mm	63 – 79 mm
50 mm	36 – 45 mm	112 mm	71 – 112 mm
68 mm	45 – 63 mm		

NOTES:

1. *To ensure print quality and print head life use only Century Systems specified ribbons.*
2. *To avoid ribbon wrinkles use a ribbon that is wider than the media by 5 mm or more. However, too much difference in width between the two may cause wrinkles.*
3. *When using a 112 mm wide media, be sure to use a 108 mm wide ribbon. Use of other ribbons may cause ribbon wrinkles.*

APPENDIX 2 MESSAGES AND LEDS

Appendix 2 describes the LCD messages displayed on the operation panel.

Symbols in the message

1: ❍: The LED is illuminated. ⊙: The LED is flashing. ●: The LED is unlit.
2: ****: the number of unprinted media. Up to 9999 (in pieces)
3: %%%%%%%: ATA Card's remaining memory 0 to 9999999 (in K bytes)
4: ###: Flash memory card remaining memory for PC save area: 0 to 895 (in K bytes)
5: &&&&: Remaining flash memory capacity for storing writable characters 0 to 3147 (in K bytes)

No.	LCD Message	LED Indication			Printer Status	Restoration by RESTART key Yes/No	Acceptance of Status Request Reset Command Yes/No
		POWER	ONLINE	ERROR			
1	ON LINE	❍	❍	●	In online mode	-----	Yes
	ON LINE	❍	⊙	●	In online mode (The printer in communication)	-----	Yes
2	HEAD OPEN	❍	●	●	The print head block is opened in online mode.	-----	Yes
3	PAUSE ****	❍	●	●	The printer is paused.	Yes	Yes
4	COMMS ERROR	❍	●	❍	A parity, overrun, or framing error has occurred during communication through the RS-232C.	Yes	Yes
5	PAPER JAM ****	❍	●	❍	The media is jammed during paper feed.	Yes	Yes
6	CUTTER ERROR****	❍	●	❍	A problem has occurred with the cutter module.	Yes	Yes
7	NO PAPER ****	❍	●	❍	The media has run out, or the media is not loaded properly.	Yes	Yes
8	NO RIBBON ****	❍	●	❍	The ribbon has run out.	Yes	Yes
9	HEAD OPEN ****	❍	●	❍	Feed or printing was attempted with the print head block open.	Yes	Yes
10	HEAD ERROR	❍	●	❍	There is a problem with the print head.	Yes	Yes
11	EXCESS HEAD TEMP	❍	●	❍	The print head is overheated.	No	Yes
12	RIBBON ERROR****	❍	●	❍	The ribbon has been torn. A problem has occurred with the sensor that determines the torque for the ribbon motor.	Yes	Yes
13	REWIND FULL ****	❍	●	❍	An overflow error has occurred in the rewinder unit.	Yes	Yes
14	SAVING%%%%%%% or SAVING ###&&&&	❍	❍	●	In writable character or PC command save mode	-----	Yes
15	FLASH WRITE ERR.	❍	●	❍	An error has occurred while writing to flash memory or ATA card.	No	Yes
16	FORMAT ERROR	❍	●	❍	An erase error has occurred in formatting the flash memory or ATA card.	No	Yes
17	FLASH CARD FULL	❍	●	❍	Data cannot be stored because the flash memory or ATA card is full.	No	Yes
18	Display of error message (See Notes.)	❍	●	❍	A command error has occurred in analyzing the command.	Yes	Yes
19	POWER FAILURE	❍	●	❍	A power failure has occurred.	No	No
20	INTIALIZING…	❍	●	●	A flash memory card is being initialized.	-----	-----
21	100BASE LAN INITIALIZING…	❍	●	●	100 Base LAN Board is being initialized.	-----	-----

NOTES:

- *If a command error is found in the command received, 16 bytes of the command error, starting from the command code, will be displayed. (However, [LF] and [NUL] will not be displayed.)*

Example 1

[ESC] T20 G30 [LF] [NUL]

Command error

The following message appears.

```
T20G30
CE-4210    V1.0A
```

Example 2

[ESC] XR; 0200, 0300, 0450, 1200, 1, [LF] [NUL]

Command error

The following message appears.

```
XR;0200,0300,045
CE-4210    V1.0A
```

Example 3

[ESC] PC001; 0A00, 0300, 2, 2, A, 00, B [LF] [NUL]

Command error

The following message appears.

```
PC001;0A00,0300,
CE-4210    V1.0A
```

- *When the error command is shown, "? (3FH)" appears for codes other than codes 20H to 7FH and A0H to DFH.*

APPENDIX 3 INTERFACE

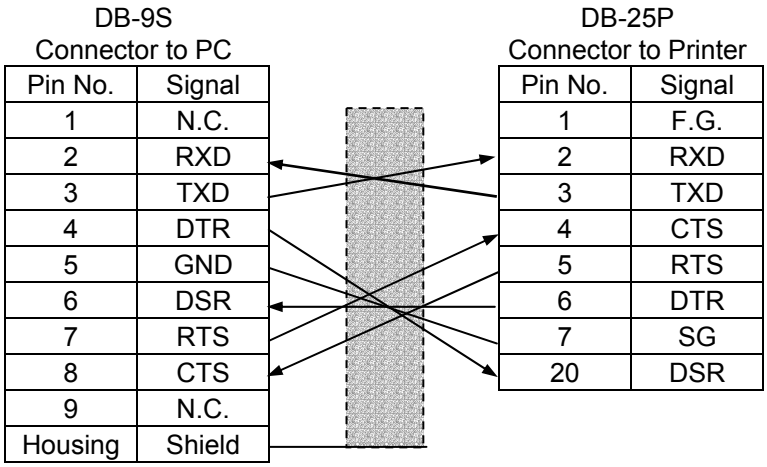
■ Interface Cables

To prevent radiation and reception of electrical noise, the interface cables must meet the following requirements:

- Fully shielded and fitted with metal or metallized connector housings.
- Keep as short as possible.
- Should not be bundled tightly with power cords.
- Should not be tied to power line conduits.

■ RS-232C Cable description

The serial data cable used to connect the printer to the host computer should be one of the following two types:

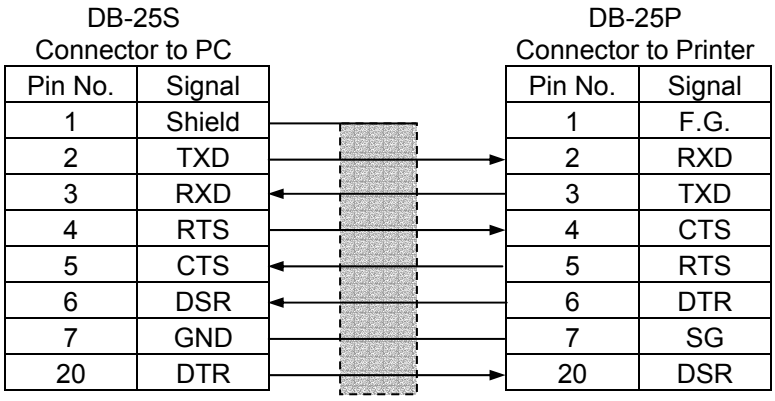


DB-9S
Connector to PC

Pin No.	Signal
1	N.C.
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	N.C.
Housing	Shield

DB-25P
Connector to Printer

Pin No.	Signal
1	F.G.
2	RXD
3	TXD
4	CTS
5	RTS
6	DTR
7	SG
20	DSR



DB-25S
Connector to PC

Pin No.	Signal
1	Shield
2	TXD
3	RXD
4	RTS
5	CTS
6	DSR
7	GND
20	DTR

DB-25P
Connector to Printer

Pin No.	Signal
1	F.G.
2	RXD
3	TXD
4	CTS
5	RTS
6	DTR
7	SG
20	DSR

NOTE:

Use an RS-232C cable with the connector including inch type securing screws for the QQ model, or metric type securing screws for the QP model.

APPENDIX 4 PRINT SAMPLES

A4.1 Bitmap Font

<A>Times Roman medium:12point

<B>Times Roman medium:15point

<C>Times Roman bold:15point

<D>Times Roman bold:18point

<E>Times Roman bold:21point

<F>Times Roman italic:18point

<G>Helvetica medium:9point

<H>Helvetica medium:15point

<I>Helvetica medium:18point

<J>Helvetica bold:18point

<K>Helvetica bold:21point

<L>Helvetica italic:18point

<M>PRESENTATION BOLD:27POINT

<N>Letter Gothic medium:14.3point

<O>Prestige Elite medium:10.5point

<P>Prestige Elite bold:15point

<Q>Courier medium:15point

<R>Courier bold:18point

<S>OCR-A 12POINT

<T>OCR-B 12POINT

<q>Gothic 725 Black:6point

A4.2 Outline Font

<Outline Font:A> Helvetica bold

<Outline Font:B> Helvetica bold(P)

<Outline Font:E> 0123456789,¥$

<Outline Font:F> 0123456789,¥$

<Outline Font:G> 0123456789,¥$

<Outline Font:H> Dutch 801 bold

<Outline Font:I> Brush 738 regular

<Outline Font:J> Gothic 725 Black

A4.3 Linear Barcode

JAN8, EAN8

MSI

Interleaved 2 of 5

CODE39 (Standard)

NW7

JAN13, EAN13

UPC-E

EAN13+2 digits

EAN13+5 digits

CODE128

CODE39 (Full ASCII)

CODE93

UPC-E+2 digits

UPC-E+5 digits

EAN8+2 digits

EAN8+5 digits

UPC-A

UPC-A+2 digits

A4.3 Linear Barcode (cont)

UPC-A+5 digits

UCC/EAN128

Industrial 2 of 5

RSS-14

A4.4 2D Barcode

POSTNET

Customer bar code

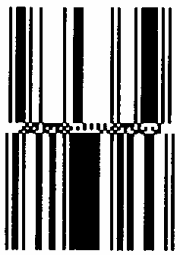
Customer bar code of high priority

KIX Code

RM4SCC

RSS-14 Stacked

RSS-14 Stacked Omni directional



RSS Limited

RSS Expanded

Data Matrix

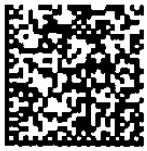
PDF417

QR code

Micro PDF417

MaxiCode

CP Code



GLOSSARIES

Bar code
A code which represents alphanumeric characters by using a series of black and white stripes in different widths. Bar codes are used in various industrial fields: Manufacturing, Hospitals, Libraries, Retail, Transportation, Warehousing, etc. Reading bar codes is a fast and accurate means of capturing data while keyboard entry tends to be slow and inaccurate.

Batch mode
Issue mode that continuously prints media until the specified number of media has been printed.

Black mark
A mark printed on the media so that the printer can maintain a constant print position by detecting this mark.

Black mark sensor
A reflective sensor which detects the difference of potential between the black mark and print area to find the print start position.

Built-in rewinder mode
Printer mode of operation where an optional strip module is installed to take up printed media onto the build-in rewinder.

Cut mode
Printer mode of operation where an optional cutter module is installed to automatically cut media from the supply roll after it is printed. The print command can specify to cut every media or to cut after a set number of media has been printed.

Cutter module
A device used to cut the media.

DPI
Dot Per Inch
The unit used to express print density.

Expansion I/O interface
An optional interface circuit that may be installed into printer to allow the printer to be connected to an external device such as a wrapping machine and to receive feed, print start, and pause signals from the external device and to send back print, pause, and error status signals to the external device.

Feed gap sensor
A transmissive sensor which detects the difference of potential between the gap between labels and the label to find the print position of the label.

Font
A complete set of alphanumeric characters in one style of type. E.g. Helvetica, Courier, Times

Gap
Clearance between labels.

IPS
Inch per second
The unit used to express print speed.

Label
A type of media with adhesive backing.

LCD
Liquid Crystal Display
Installed on the operation panel, and displays operation modes, error message and so on.

Media
Material on which data is printed by the printer. Label, tag paper, fanfold paper, perforated paper, etc.

PCMCIA interface
An optional interface circuit that may be installed into the printer to allow the use of the small credit card sized PC cards, such as flash memory cards and LAN cards. PCMCIA is the acronym for Personal Computer Memory Card International Association.

Pre-printed media
A type of media on which characters, logos, and other designs have been already printed.

Print head element
The thermal print head consists of a single line of tiny resistive elements. When current is allowed to flow through each element, it heats up, causing a small dot to be burned onto thermal paper or a small dot of ink to be transferred from a thermal ribbon to ordinary paper.

Print speed
The speed at which printing occurs. This speed is expressed in units of ips (inches per second).

Reflective sensor
See Black mark sensor.

Resolution
The degree of detail to which an image can be duplicated. The minimum unit of divided image is called a pixel. As the resolution becomes higher, the number of pixels increased, resulting in a more detailed image.

Ribbon
An inked film used to transfer an image onto the media. In thermal transfer printing,, ribbon is heated by the thermal print head, causing an image to be transferred onto the media.

Strip mode
A device used to remove labels from the backing paper.

Supply
Media and ribbon.

Tag
A type of media with no adhesive. Usually tags are made of cardboard or other durable material.

Thermal direct printing
A printing method using no ribbon, but thermal media which reacts to heat. The thermal print head heats the thermal media directly, causing the image to be printed on the media.

Thermal print head
A print head using thermal transfer or thermal direct printing method.

Thermal transfer printing
A printing method in which the thermal print head heats an ink or resin coating on the ribbon against the media, causing the ink/resin to transfer onto the media.

Threshold setting
A sensor setting operation to have the printer maintain a constant print position of pre-printed media.

Transmissive sensor
See Feed gap sensor.

USB (Universal Serial Bus)
An interface that is used to connect peripherals, such as a printer, keyboard, mouse. The USB allows disconnection of a USB device without turning off the power.

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